	Original	Print
Testimony of James P. Strickler	4048	2718
C. I. Weaver	4049	2718
H. R. Allensworth	4051	2720
Cost of financing—Columbus Gas and Fuel Co	4073	2733
Testimony of L. E. Welker	4074	2733
Arthur S. Dewing	4078	2735
F. C. Hamilton	4104	2754
B. L. Wheeler	4109	2758
H. R. Allensworth	4121	2765
General overheads—Columbus Gas and Fuel Co	4128	2770
Testimony of L. E. Welker	4129	2770
James P. Strickler	4157	2787
H. R. Allensworth	4161	2789
Working capital, materials and supplies—Columbus Gas and Fuel Co	4172	2797
Testimony of Loy Welker	4173	2797
Testimony of H. R. Allensworth	4191	2807
Annual allowance for depreciation—Columbus Gas and Fuel Co	4194	2809
Testimony of H. R. Allensworth	4195	2809
Load building expense—Columbus Gas and Fuel Co	4205	2813
Testimony of L. A. Seyffert	4206	2813
H. R. Allensworth	4224	2823
L. A. Seyffert	4229	2828
Gas sales . . . Lost gas—Columbus Gas and Fuel Co	4233	2830
Testimony of L. A. Seyffert	4234	2830
H. R. Allensworth	4236	2831
L. A. Seyffert	4253	2841
H. R. Allensworth	4258	2844
Collar leak clamps—Columbus Gas and Fuel Co	4277	2856
Testimony of H. R. Allensworth	4278	2856
Company exhibits	4304	2874
No. 2—Summary; Reproduction cost new and reproduction cost new value less depreciation, Columbus Gas and Fuel Co	4304	2874
No. 10—Projected income statement, Columbus Gas and Fuel Co	4305	2875
No. 11—Gas contract, Ohio Fuel Gas Co. with Columbus Gas and Fuel Co and Federal Gas and Fuel Co., July 1, 1929	4309	2879
No. 12—Articles of agreement between Ohio Fuel Supply Co. and Columbus Gas and Fuel Co., March 12, 1914	4314	2884
No. 15—Balance sheet, Dec. 31, 1929, Columbus Gas and Fuel Co	4325	2895
No. 16—Dividend statement, Columbus Gas and Fuel Co.	4327	2896
No. 17—Income statements, Columbus Gas and Fuel Co.	4328	2897

	Original	Print
No. 19—Statement showing additions to property, Columbus Gas and Fuel Co.	4329	2898
No. 43—Statement showing detailed classification of M C. F. sold, amount of revenue received, and average rate per M C. F. sold for year ended June 30, 1930, including the Pittsfield Gas Co. for last six months of 1929 (Ohio Fuel Gas Co.)	4330	2899
No. 44—System wide city gate rate—valuation summary of production and transmission property as of December 31, 1929, and valuation of Gas Lands as of June 30, 1929, with analysis of cost per M C. F. of delivering gas at the city gates for year ended December 31, 1929 (Ohio Fuel Gas Co.)	4338	2907
No. 45—Valuation—The Ohio Fuel Gas Company as of December 31, 1929—Volume I—Summary	4344	2912
No. 58—Contract of The United Fuel Gas Company with The Ohio Fuel Gas Company for the sale of gas to the latter, dated October 31, 1927	4346	2915
No. 59—Contract of August 30, 1926, for purchase of gas by Hope Natural Gas Company from the United Fuel Gas Company	4353	2920
No. 60—Contract of October 15, 1928, for purchase of gas by Hope Natural Gas Company from the United Fuel Gas Company	4360	2927
No. 61—Contract of October 1, 1924, for purchase of gas by The Logan Gas Company from the Union Natural Gas Corporation	4371	2936
No. 62—Copy of Voucher A-551 of The Ohio Fuel Gas Co. showing purchase of gas from The Hope Natural Gas Co.	4379	2942A
No. 64—Compilation of natural gas security issues	4384	2944A
No. 69—Statement showing allocation of city gate costs to City of Columbus, 1929, Ohio Fuel Gas Co.	4386	2945
No. 74—Excerpt from minutes of meeting of directors of Ohio Fuel Gas Co., Nov. 5, 1924	4387	2946
No. 78—Statement of the Public Service Commission of West Virginia to the Supreme Court of Appeals of W. Va. Re The United Fuel Gas Company	4395	2950
No. 80—System wide production and transmission costs—United Fuel Gas Company	4418	2965
No. 81—Balance sheet as of December 31, 1929—United Fuel Gas Company	4439	2976
No. 82—Balance sheet as of December 31, 1930—United Fuel Gas Company	4440	2977
No. 83—Map showing production and transmission System—United Fuel Gas Company	4441	2978A
No. 96—Income statement, 1930, Columbus Gas and Fuel Co.	4442	2979

	Original	Print
No. 97—Balance sheet, Dec. 31, 1930, Columbus Gas and Fuel Co.	4443	2979
No. 98—Memorandum re ordinances introduced as company exhibits Nos. 28 to 41 inc.	4444	2980
No. 116—Valuation and inventory of property of United Fuel Gas Company as of December 31, 1928	4449	2985
No. 140—An offer from The Benedum-Trees Oil Company dated June 23, 1931, to purchase gas lands from Ohio Fuel Gas Company	4452	2989
Nos. 157-A to 157-D—Excerpts from "Gas Age," July 19, 1918	4453	2989
No. 159—Excerpt from Ohio State Journal, Oct. 7, 1931	4457	2996
No. 173—Memorandum re difference in classification, etc.	4458	2997
No. 177—Statement showing reserves for replacements, retirements, etc., with ratio of reserves to book investment of property for 3 years—Ohio Fuel Gas Company	4461	2999
No. 178—Statement showing reserves for amortization of leaseholds only, with ratio of reserves to value of leaseholds for 3 years—Ohio Fuel Gas Co.	4462	2999
No. 178-A—Statement showing reserves for amortization of leaseholds only, with ratio of reserves to value of leaseholds as per books adjusted to reflect for correction made in December, 1930—Ohio Fuel Gas Co.	4463	3000
No. 179—Statement showing leases transferred to class 1, years 1927 to 1929, inc., Ohio Fuel Gas Co.	4464	3001
No. 180—Statement of annual payments in lieu of drilling agreements as of June 30, 1929—Ohio Fuel Gas Co. (including The Logan Gas Company)	4465	3002
No. 184—Income statement for nine months ended Sept. 30, 1931, Columbus Gas and Fuel Co.	4466	3004
No. 186—Valuation statement of Aug. 31, 1925, Columbus Gas and Fuel Co.	4468	3006A
No. 201—Division of water works—City of Columbus, 16" C. I. water main	4469	3007
No. 205—Projected income statement based on actual operations for year ended Dec. 31, 1929, Columbus Gas and Fuel Co.	4475	3010
No. 208—Findings of Public Utilities Commission of Ohio, No. 341	4476	3011
No. 210—Blundon appraisal and methods applied on each market, etc.	4484	3018A
City exhibits	4484-A	3019
No. 26—Statement showing acreage operated and unoperated by counties as of June 30, 1929—Ohio Fuel Gas Co.	4484-A	3019

	Original	Print
No. 27—Statement showing number of operated and unoperated acres with value as per books from December 31, 1925, to December 31, 1930—Ohio Fuel Gas Company and The Logan Gas Company	4485	3020
No. 30—Opinion of Supreme Court of Appeals of West Virginia, Nos. 6956 and 6956-A	4486	3020
No. 46—Income statement for year ended December 31, 1930—Ohio Fuel Gas Company	4503	3032
No. 47—Balance sheet as of December 31, 1930—Ohio Fuel Gas Company	4504	3033
No. 50—Gross additions to acreage from January 1, 1924, to December 31, 1929—Ohio Fuel Gas Company and The Logan Gas Company	4505	3034A
No. 50-A—Supplement to City Exhibit #50, showing additions, transfers and abandonments of acreage from January 1, 1924, to December 31, 1929—Ohio Fuel Gas Co. and The Logan Gas Company	4506	3034A
No. 60—Valuation as of Dec. 31, 1929, property for service within City of Columbus, Columbus Gas and Fuel Co., collation	4507	3035
No. 66—Labor performance data, Dec. 31, 1929, Columbus Gas and Fuel Co.	4509	3037
No. 69—Income statement, 1929, Columbus Gas and Fuel Co.	4522	3042
No. 102—Statement showing net book additions to fixed capital accounts, United Fuel Gas Co.	4523	3042
No. 108—Report of Williamson, Public Service Commission statistician, filed May 27, 1931	4524	3043
No. 110—Statement showing reserve for replacements, retirements, etc., to ratio of reserves to book investment of property for 5 years—Ohio Fuel Gas Company	4532	3053
No. 111—Statement showing reserves for amortization of leaseholds only with ratio of reserves to value of leaseholds as per books for 5 years—Ohio Fuel Gas Company	4533	3053
No. 2—Statement showing detail of operating expenses, etc., Columbus Gas and Fuel Co.	4534	3054
Company exhibits	4538	3057
Nos. 23, 23-A, 23-B—Statements and diagrams showing receipts and deliveries, Ohio Fuel Gas Co.	4538	3057
No. 23-C—Diagram showing properties of Logan Gas Co., June 1, 1929	4544	3060A
Nos. 76 & 77—Condensed statements of income and expenses of Columbia Engineering and Management Corp., Dec. 31, 1929, Dec. 31, 1930	4545	3061

	Original	Print
No. 79—Summary of operating expenses of Columbia Engineering and Management Corp., Dec. 31, 1930	4547	3063
No. 93-A—Statement showing monthly sales by classes, etc., Columbus Gas and Fuel Co.	4556	3070
City exhibits	4557	3072
No. 6—List of subsidiary companies as of Dec. 31, 1929, Columbia Gas and Electric Corp.	4557	3072
No. 11—Statements showing directors and officers of various companies for years 1927 to 1930 inc.	4558	3073
Nos. 18 & 18-A—Statements showing results of operations, 1929 and 1930, Preston Oil Co.	4581	3085
No. 21—Annual report of Columbia Gas and Electric Corp. and subsidiary companies, 1930	4583	3086
No. 23—Statement showing book investment income and dividends, etc., Preston Oil Co.	4595	3105
No. 24—Statement showing gas wells operated by counties as of June 30, 1929, Ohio Fuel Gas Co.	4596	3105
No. 25—Statement showing operated acreage by counties, etc., Preston Oil Co.	4597	3106
No. 28—Analysis of Columbia Engineering & Management Corp. charges for 1929 and 1930, Columbus Gas and Fuel Co.	4598	3107
No. 33—General balance sheet, 1929 and 1930, Columbia Engineering & Management Corp.	4599	3107
No. 36—Balance sheets, 1929 and 1930, Preston Oil Co.	4600	3108
No. 37—Statement showing book investment, income and dividends, etc., Preston Oil Co.	4601	3108
No. 39—Analysis of direct overheads; reference to company exhibit 2	4602	3109
No. 51—Statement showing M C. F. purchased and produced, etc., 1929 and 1930, Ohio Fuel Gas Co.	4604	3111
No. 52—Statement showing amount of gas sold at 45¢ per M C. F., 1928-1930, Columbus Gas and Fuel Co.	4605	3112
Nos. 56-57-58-59-60—Valuation statements as of Dec. 31, 1929, Columbus Gas and Fuel Co., property within City of Columbus	4607	3113
No. 65—Classification of leaseholds	4628	3124
No. 67—Income statement, 1929, Columbus Gas and Fuel Co.	4630	3125
No. 68—Tables 1 to 9 inc.; labor statistics, cost of certain work, etc.	4636	3129
No. 69—Income statements, 1929, Columbus Gas and Fuel Co., valuation statements, etc.	4651	3138
No. 70—Statement showing operating expense, 1929, Ohio Fuel Gas Co.	4697	3161
No. 75—Determination of city gas rate for natural gas at Columbus, etc.	4701	3164

	Original	Print
No. 86—Report of Ohio Fuel Gas Co., city gate rate, prepared for City of Columbus	4702	3164
No. 87—Report of Ohio Fuel Gas Co., general and direct overhead, city gas rate, prepared for City of Columbus	4707	3166
No. 88—Report of Ohio Fuel Gas Co., city gate rate, prepared for City of Columbus	4721	3167
No. 113—Statement showing monthly deliveries of natural gas to Northwestern Ohio Natural Gas Co., 1929 and 1930	4729	3172
No. 115—Report of Ohio Fuel Gas Co., miscellaneous studies, city gate rate, prepared for City of Columbus	4730	3173
No. 116—Map of Ohio showing districts and towns of Columbia Gas and Electric Corp., Columbus group, as of July 1, 1930	4757	3190A
Joint exhibit—Statement showing charges to reserve for amortization of leaseholds, 1928-1930, Ohio Fuel Gas Co.	4759	3191
Clerk's certificates (omitted in printing)	4760	
Order extending time	4762	3192
Statement of points to be relied upon and designation of parts of record to be printed	4764	3193
Counter-designation of additional parts of record to be printed	4765	3210



[fol. 1]. Certificate of transmittal omitted in printing.

[fol. 2] **IN SUPREME COURT OF OHIO**

No. 23864

THE COLUMBUS GAS & FUEL COMPANY, Plaintiff in Error,

vs.

THE PUBLIC UTILITIES COMMISSION OF OHIO, Defendant in Error

PETITION IN ERROR—Filed November 29, 1932

Plaintiff in error says that it is a corporation organized under the laws of Ohio and engaged as a public utility in distributing natural gas for light, heat and power purposes to consumers in the city of Columbus, Franklin county, Ohio, and contiguous territory. That it is the owner of and operating and doing business under a certain franchise granted by the city of Columbus to its predecessor in title, its successors and assigns, by Ordinance No. 4539, passed by the city council of the city of Columbus, Ohio, February 4, 1889.

That on November 5, 1929, the city of Columbus passed an ordinance entitled "An Ordinance, No. 645-29, to regulate the price that may be charged for natural gas in the city of Columbus during the period of five years from the twelfth day of November, 1929, and providing for the submission of this ordinance to a referendum vote at an election to be held November 5, 1929."

[fol. 3] That said Ordinance No. 645-29 was submitted to a vote of the qualified electors of the city of Columbus and was approved by a majority of those voting thereon at the election held on November 5, 1929, and said ordinance by its terms became effective from and after November 12, 1929.

That said Ordinance No. 645-29 was not accepted by plaintiff in error.

Plaintiff in error, further says that on the thirty-first day of December, 1929, it presented to and filed with the defendant in error, The Public Utilities Commission of

Ohio, its complaint in writing that the rate and price so fixed to be charged for natural gas in the city of Columbus during the period of five years from said twelfth day of November, 1929, was and would be unlawful, unjust, unreasonable and insufficient to yield a reasonable compensation for the service, having due regard to the value thereof and of all the property of plaintiff in error actually used and useful for the convenience of the public in furnishing said service and to the necessity of making reservations from its income for surplus, depreciation, contingencies and such other matters as may be proper, including the purchasing of a supply of natural gas in order to furnish said service, and praying that after hearing and investigation the commission determine the rate and price so fixed by said Ordinance No. 645-29 to be unlawful, unjust and unreasonable and insufficient to yield reasonable compensation for the service, and determine and fix the just and reasonable rate and price to be charged, demanded, [fol. 4] exacted and collected therefor as required by law, and order the same submitted for the rate, charge and price fixed by said ordinance.

Plaintiff in error further says that on the third day of October, 1932, and by a nunc pro tunc amendment as of said date, the defendant in error, The Public Utilities Commission of Ohio, made and filed in writing in said proceeding, its findings of fact and duly entered in said proceeding the following order, to wit:

"This day after full hearing and argument by counsel, this proceeding came on for final consideration upon the complaint of and appeal by The Columbus Gas and Fuel Company from Ordinance No. 645-29 passed by the council of the city of Columbus, Ohio, September 3, 1929, to regulate the price of natural gas in the city of Columbus for a period of five years, the testimony offered and introduced in evidence upon such hearing, and the briefs and oral argument of counsel.

The commission, being fully advised in the premises, and having this day made and filed, in writing, its finding of facts and coming first to value the property of said appellant, used and useful for the convenience of the public in the furnishing of natural gas for public and private consumption in the city of Columbus, and after considering the inventories of said property filed herein by said appel-

lant, and the respondent, the city of Columbus, the evidence and exhibits, and having completed valuation of said property, finds and ascertains the value of the several kinds and classes of property of The Columbus Gas and Fuel Company, used and useful for the convenience of the public in the furnishing of natural gas service for public and private consumption in the city of Columbus and of said properties as a whole, as of December 31, 1929, to be the sum of $4,029,647.00, as more fully set forth in Exhibit 'C' appended to the finding of facts filed herein, which exhibit [fol. 5] hereby is made a part of this entry by adoption, as fully as if the same were here set forth in its entirety;

To which finding of the commission, the parties hereto, The Columbus Gas and Fuel Company and the city of Columbus, Ohio, each then excepted, here now except and their exceptions here are noted of record.

And the commission coming now to consider the complaint of and appeal by said The Columbus Gas and Fuel Company from the aforesaid ordinance, and having caused an appraisement to be made and having ascertained and hereinbefore determined and having fixed the value of all of the property of the said company, actually used and useful for the convenience of the public in the furnishing of natural gas service for public and private consumption in the city of Columbus, excluding therefrom the value of any franchise, the right to own, operate or enjoy the same, in excess of the amount (exclusive of any tax or annual charge) actually paid to any political subdivision of the state or county as a consideration for the grant of such franchise or right, and exclusive of any value added thereto by reason of a monopoly or merger and having given consideration to the necessity for making reservations from the income for surplus, depreciation and contingencies, and having taken into consideration all other matters which were deemed proper, the commission further finds:

That the value of all of the property of The Ohio Fuel Gas Company, exclusive of distribution plant, as of December 31, 1929, is the sum of $74,538,280.00, as fully set forth in Exhibit 'B' appended to the finding of facts filed herein, which exhibit hereby is made a part of this order by adoption;

That the value of all of the property of The United Fuel Gas Company, exclusive of distribution plant, as of December 31, 1929, is the sum of $37,422,112.00, as set out in Exhibit 'A', which exhibit hereby is made a part of this order by adoption;

[fol. 6] That the reasonable and just rate to be paid for natural gas by The Ohio Fuel Gas Company to producing companies at the Ohio river when such gas is to be distributed in the city of Columbus, Ohio, is the sum of 22¢ per thousand cubic feet;

That the reasonable and just rate to be paid for natural gas by The Columbus Gas and Fuel Company to The Ohio Fuel Gas Company at the point of delivery at the city of Columbus, Ohio, is the sum of 39¢ per one thousand cubic feet;

That the reasonable annual charge to be made by The Columbus Gas and Fuel Company for and on account of necessary appropriations to its depreciation reserve account will be one and one-half per cent. of the present value of its depreciable property;

That a reasonable annual rate of return to be allowed The Columbus Gas and Fuel Company for the furnishing of natural gas service in the city of Columbus, Ohio, will be 6½ per cent. of the aforesaid value of its property, used and useful for the furnishing of natural gas service in the city of Columbus, Ohio;

That the reasonable costs and expenses of The Columbus Gas and Fuel Company for the furnishing of its natural gas service to consumers within the city of Columbus, Ohio, based upon a consumption of 5,671,639,000 cubic feet of natural gas for the calendar year ended December 31, 1929, were as set forth in Exhibit 'C', Sheet 1, appended to the finding of facts filed herein, which exhibit hereby is made a part of this order by adoption;

That for the same fiscal period, the reasonable operating expenses of The Ohio Fuel Company and of The United Fuel Gas Company were as set forth in Exhibit 'B', Sheet 1, and 'A', Sheet 1, attached to the finding of facts filed herein, which exhibits are hereby made parts of this order by adoption;

[fol. 7] That the rate per thousand cubic feet of 48¢, with an additional charge of 5¢ per thousand cubic feet, if the monthly bills are not paid within a fixed time, with a mini-

mum charge of 75¢ per month without discount, fixed and prescribed by said ordinance, are unreasonable and unjust and ought not to be ratified and confirmed, and that just and reasonable rates and charges should be substituted therefor;

That the rate per thousand cubic feet of 55¢, with an additional charge of 5¢ per thousand cubic feet, if monthly bills are not paid within a fixed time, and a monthly minimum charge of 75¢, without discount, are just and reasonable rates and charges for the service furnished and supplied by said appellant in the city of Columbus, Ohio, and

That the gross and net revenues derived by said The Columbus Gas and Fuel Company for furnishing natural gas for public and private consumption, in the city of Columbus, at the rates and charges hereinbefore found by the commission to be just and reasonable will be sufficient to yield said The Columbus Gas and Fuel Company a reasonable compensation for such service.

It is, therefore, Ordered, That the rates and charges hereinbefore set forth which are found and determined by this commission to be just and reasonable for the furnishing of natural gas service by The Columbus Gas and Fuel Company for public and private consumption in the city of Columbus, be, and hereby they are substituted for the rates and charges fixed by said ordinance, which the commission has found to be unjust and unreasonable, and the commission having made inquiry and investigation with respect to the ability of said The Columbus Gas and Fuel Company to furnish natural gas for public and private consumption in the city of Columbus, as fixed by said ordinance, and having found that said The Columbus Gas and Fuel Com- [fol. 8] pany will be able to furnish its said product in said city for said period, it is therefore further,

Ordered, That the rates and charges not greater than or in excess of the rates and charges for the furnishing of natural gas to the city and private consumers, and to the public buildings, grounds, streets, alleys and market places in the city of Columbus, Ohio, for public and private consumption, which the commission herein has found to be just and reasonable, be, and remain in force and effect for a period of five years from and after the effective date of the ordinance herein complained of and appealed from, and said The Columbus Gas and Fuel Company hereby is

notified, directed and required to furnish its product to its consumers thereof, public and private, in the city of Columbus, Ohio, for said period.

To which order of the commission, The Columbus Gas and Fuel Company, and the city of Columbus, each then excepted, here now except, and their exceptions here are noted of record."

To which said findings and order the plaintiff in error then and there excepted.

Plaintiff in error further says that on the first day of November, 1932, it filed in said proceeding its protest to the valuations of property found and determined by defendant in error therein, and that defendant in error failed to make any changes in said valuations before making the same final.

Plaintiff in error further says that on the first day of November, 1932, it filed with the said commission its application by petition for rehearing, setting forth specifically the grounds on which plaintiff in error considered said decision or order to be unreasonable and unlawful, which said application was denied by an order duly entered by [fol. 9] defendant in error in said proceeding on the twenty-eighth day of November, 1932, to which order the plaintiff in error then and there excepted.

Plaintiff in error says that there is error in said proceeding, findings, decision and order of the defendant in error prejudicial to plaintiff in error and affecting materially its substantial rights, and said findings, decision and order are unlawful and unreasonable in each of the following particulars, all of which were specifically set forth and included in the application for rehearing above referred to, to wit:

In respect of the valuation of the property of The Columbus Gas and Fuel Company;

(1) The valuation found by the commission is contrary to the evidence, is not supported by the evidence, is manifestly against the weight of the evidence and is not the true value of all the property of plaintiff in error actually used and useful for the convenience of the public, excluding therefrom the value of any franchise or right to own, operate or enjoy the same in excess of the amount (exclusive of any tax or annual charge) actually paid to any

political subdivision of the state or county as a consideration for the grant of such franchise or right; and exclusive of any value added thereto by reason of a monopoly or merger. The value so fixed by the commission will result in a confiscation of plaintiff in error's property and will deprive plaintiff in error of its property without due process of law and deny to it the equal protection of the law, contrary to the provisions of Section One of Article Fourteen of the articles in addition to and amendment of the Constitution of the United States.

[fol. 10] (2) The admitting, receiving and/or relying upon the evidence, or any part thereof, of the witness Harry R. Allensworth for the reason that said Allensworth did not possess the necessary training, education and/or experience which gave him any peculiar knowledge in respect of the subjects and matters to which he testified.

(3) The overruling of objections to the testimony and exhibits introduced by and through the witness Harry R. Allensworth.

(4) The overruling of objections to the testimony and exhibits introduced by and through the witness Philip Burgess and especially to that testimony and those exhibits of said Burgess which were predicated upon the testimony and exhibits of the witness Harry R. Allensworth.

(5) In Account 228—Land: The elimination of the holder station land appraised at $18,700.00 present value, the correctness of which appraisal was not questioned.

(6) In Account 232—Other distribution system structures: The elimination of the holder station structures appraised at $3207.00 reproduction cost new and $2908.00 reproduction cost new less depreciation, the correctness of which appraisal was not questioned.

(7) In Account 233—Gas receivers and district regulators: The elimination of holder station and equipment appraised at $186,828.00 reproduction cost new and $146,163.00 reproduction cost new less depreciation, the correctness of which appraisal was not questioned.

(8) In Account 234—Distribution line equipment: The elimination of $266,803.00 reproduction cost new and $216,427.00 reproduction cost new less depreciation, or any part

[fol. 11] thereof, due to the use by the commission of erroneous performance and labor rates, contrary to the evidence in said proceeding.

(9) In Account 235—Service line equipment: The elimination of $79,087.00 reproduction cost new and $61,134.00 reproduction cost new less depreciation, or any part thereof, due to the use by the commission of erroneous performance and labor rates, contrary to the evidence in said proceeding.

(10) In Accounts 258 to 266, inclusive: The elimination of the sum of $181,173.00 reproduction cost new and $148,981.00 reproduction cost new less depreciation, or any part thereof, due to the use by the commission of an erroneous percentage for undistributed construction expenditures (general overheads) and the application of that erroneous percentage to an erroneous valuation of the physical property, and based upon the following erroneous assumptions by the commission:

(a) That the construction period for reconstructing the property of The Columbus Gas and Fuel Company was less than the construction period for constructing the property of The Ohio Fuel Gas Company;

(b) That in case of the shorter construction period assumed there would or could be any difference in the items of interest or taxes during construction.

(11) The depreciating below the cost of reproduction new of undistributed construction expenditures (general overheads) for which the commission made no allowance for annual depreciation reserve.

(12) The elimination of going concern value. Such [fol. 12] action of the commission is contrary to the evidence, is not supported by the evidence and will result in the confiscation of plaintiff in error's property and will deprive plaintiff in error of its property without due process of law and deny to it the equal protection of the law, contrary to said provisions of said Fourteenth Amendment.

(13) The allowance for working capital, materials and supplies of a sum inadequate to conduct the business of plaintiff in error, and contrary to the established practice of the commission in allowing for working capital, mate-

rials and supplies a sum equal to five per centum of the present value of the used and useful physical property.

(14) As shown by the agreed upon evidence introduced in the proceeding under review here, United States District Judge Hough found, in the Federal Court case, a present value of $3,976,359.00 for the used and useful property of plaintiff in error as of August 31, 1925. Since the date certain of said valuation plaintiff in error has increased its used and useful property approximately 30 per cent. by net additions costing (at book cost only) $1,203,233.00, exclusive of all overheads, or a total value of property without overheads and without depreciation since said date certain of $5,179,592.00, or a total of $1,151,945.00 more than the valuation made by the commission in the proceeding involved here.

(15) As shown by the agreed upon evidence in the proceeding under review here, it was adjudicated in a proceeding duly pending in the United States District Court for the Southern District of Ohio, Eastern Division—The Columbus Gas and Fuel Company v. The City of Columbus, in [fol. 13] Equity No. 362, that the used and useful property of The Columbus Gas and Fuel Company dedicated to serving natural gas within the city of Columbus did possess a going concern value of the value on August 31, 1925, of $409,842.00.

(16) The adopting of theoretical labor performances in total disregard of the evidence of the plaintiff in error showing actual performance on every similar job of work in or around the city of Columbus over a period of time sufficient to justify the accuracy of the data, with moving and still pictures showing the actual make-up of labor gangs, equipment, trucks and working conditions.

Without admitting the right, power or authority of the commission to fix a valuation of the property of The Ohio Fuel Gas Company in the above mentioned proceeding, The Columbus Gas and Fuel Company says that there is error in said proceeding, findings, decision and order in respect of the valuation of the property of The Ohio Fuel Gas Company found by the commission in its said finding and order of October 3, 1932, in the following respects, to wit:

(17) The commission had no right, power or authority to fix the value of the property of The Ohio Fuel Gas Company in said proceeding. Said The Ohio Fuel Gas Company is not a public utility in respect of the natural gas sold and/or delivered by it to The Columbus Gas and Fuel Company.

(18) The valuation found by the commission is contrary to the evidence, is not supported by the evidence, is manifestly against the weight of the evidence and is not the true [fol. 14] value of all the property of The Ohio Fuel Gas Company actually used and useful for the convenience of the public, excluding therefrom the value of any franchise or right to own, operate or enjoy the same in excess of the amount (exclusive of any tax or annual charge) actually paid to any political subdivision of the state or county as a consideration for the grant of such franchise or right; and exclusive of any value added thereto by reason of a monopoly or merger. The value so fixed by the commission will result in a confiscation of said The Ohio Fuel Gas Company's property and will deprive said company of its property without due process of law and deny to said company the equal protection of the law, contrary to the provisions of Section One of Article Fourteen of the articles in addition to and amendment of the Constitution of the United States.

(19) The admitting, receiving and/or relying upon the evidence, or any part thereof, of the witnesses Harry B. Allensworth and J. Paul Blundon for the reason that said Allensworth and Blundon did not possess the necessary training, education and/or experience which gave them any peculiar knowledge in respect of the subjects and matters to which they testified.

(20) The overruling of objections to the testimony and exhibits introduced by and through the witness Harry R. Allensworth.

(21) The overruling of objections to the testimony and exhibits introduced by and through the witness J. Paul Blundon and especially to that testimony and those exhibits of said Blundon which were predicated upon the [fol. 15] testimony and exhibits of the witness Harry R. Allensworth.

(22) The elimination of the cost of organization in the amount of $1,999,922.00 and the failure to make any provision for the cost of organization.

(23) The elimination of incomplete construction of the value of $234,295.00, or any part thereof.

(24) In accounts 258 to 266, inclusive—Undistributed construction expenditures: The elimination of $481,224.00 or reproduction cost new value and $2,539,939.00 reproduction cost new less depreciation, contrary to the evidence in said proceeding and contrary to the practice of the commission in other cases.

(25) The failure of the commission to allow the cost of financing which would necessarily be incurred in the reproduction of the property of The Ohio Fuel Gas Company, and which the commission is authorized to recognize and allow by sub-section g of Section 499-9 of the General Code of Ohio.

(26) The placing of an inadequate valuation on the No. 1 acreage, contrary to the evidence in said proceeding.

(27) The commission failed to take into consideration the cost and amount of acreage which it was necessary to prospect, take up and test to develop The Ohio Fuel Gas Company's present No. 1 acreage.

(28) The elimination of all value for No. 2 leaseholds which the testimony in said proceeding shows to be now used and useful and necessary for supplying natural gas during the term of the ordinance therein appealed from.

[fol. 16] (29) The elimination of all value for No. 3 and 4 classes of leaseholds, which the uncontroverted evidence in said proceeding shows to be necessary to the conduct of the business of The Ohio Fuel Gas Company in supplying natural gas to The Columbus Gas and Fuel Company during the term of the ordinance therein appealed from.

(30) The commission found that the No. 1 acreage of The Ohio Fuel Gas Company, on which it has allowed a valuation, is sufficient only for three years and two months, while the ordinance appealed from fixes a rate for five years, and the commission has not changed such ordinance term.

(31) The refusing to admit competent and relevant testimony tending to show that there is a market for leaseholds and tending to show the value of such leaseholds in the market.

(32) The refusing to consider competent and relevant evidence tending to show that there is a market for gas leaseholds and tending to show the value of such leaseholds in such market.

(33) The refusing to admit and consider Company Exhibit No. 140, which was a written offer from Benedum-Trees Oil Company of thirty million dollars cash for the gas leaseholds of The Ohio Fuel Gas Company. (Record, page 3314.)

(34) The holding that The Ohio Fuel Gas Company had a monopoly within its own field in the matter of leaseholds. Company Exhibits Nos. 142, 143 and 144 and Company Ex- [fol. 17] hibit No. 139 introduced in said proceeding, show that the various leaseholds, including all of The Ohio Gas Fuel Company's operated acreage, are located contiguous to leaseholds owned and operated by others. Leases of gas bearing lands owned and operated by others are interspersed throughout the entire territory of The Ohio Fuel Gas Company's leaseholds.

(35) The commission erred in its finding and/or holding (Page 19):

"that inasmuch as the Supreme Court has held that the nonproductive acreage may not be considered in fixing the rate base, it must logically follow that the expense of carrying that nonproductive acreage may not be considered as a part of the maintenance of the system which has at its command other acreage which is actually producing gas and is therefore used and useful."

In view of other findings or holdings made by the commission in respect of said leaseholds, its deduction instead of being logical is a non sequitur and for the following reasons, to wit:

At page 8 of its findings or holdings in said proceeding the commission found:

"The company did present a mass of testimony touching every detail of the great system which has been built up for the purpose of acquiring and developing gas land throughout the states of Ohio, West Virginia and to some extent in Kentucky, and of the transportation of gas from the fields to the points of ultimate distribution. In addition to the lands now used as a present source of supply, it also developed the fact that the company holds in reserve under lease hundreds of thousands of acres of lands not yet [fol. 18] developed but which are a potential reservoir which must be controlled in order that a continuous supply of gas may be assured such as will justify the investment of large sums of money in transportation and distribution systems."

At page 14 of its findings or holdings the commission found:

"Large gas companies, and especially the one now under consideration, have pursued the policy of acquiring, under lease, not only gas lands which have been tested and are known to be gas producing, but also other lands adjacent thereto, which from a geological study and their proximity to tested lands give promise of supplying a reservoir from which gas may be drawn through a long period of years."

At page 18 of said findings or holdings it was found by the commission:

"It is urged by the company that a wise business policy dictates that future requirements must be provided for to justify the expenditure of large sums of money in transportation and distribution facilities. It is insisted that the control of large reservoirs of gas for future use is the very foundation of the stability of the company and that without such reserve the company could not in justice to itself spend the sums necessary for transmission lines and for distribution within municipalities. It is insisted that it would be the height of folly to venture large sums which would be lost to the company if it were deprived of the back-log of gas reserves, and it is pointed out that unless the company secure to itself these gas lands for future development, a rival company might come into the field and lease the lands placing the present company at the mercy of its rival, when it has exhausted the gas beneath what is now designated as productive acreage.

[fol. 19] "It is insisted that while the Supreme Court in the Logan gas case above referred to decided that unproductive lands could not be considered in fixing the base valuation, yet the question was not squarely placed before it as to whether or not the expense of carrying this acreage was a proper maintenance charge to be paid out of the income of the company, to be charged against the present rate payer.

"It must be admitted that there is much force in the contention of the company. On the other hand it is urged that the present rate payer should not be penalized by a higher rate to take care of the future rate payer. It is urged that, if the company as a matter of policy, decides to secure to itself gas reserves which are not at present used and useful that that is no concern of the present rate payer who is obliged to pay only a proper return upon the property used and useful."

The evidence showed and the commission found that the average remaining life of the No. 1 leaseholds was three years and two months. Notwithstanding the commission allowed only the value of leaseholds which would be exhausted within three years and two months from the effective date of the ordinance, the commission made the assumption that The Ohio Fuel Gas Company had an inexhaustible supply of gas and the commission predicated its annual allowance for depreciation reserve on the property of The Ohio Fuel Gas Company upon the assumption of such inexhaustible supply of gas, and refused to allow anything for obsolescence or amortization on the admitted used and useful property of The Ohio Fuel Gas Company. [fol. 20] It is respectfully urged that the annual allowances for depreciation, obsolescence and/or amortization should be based upon the life of the leaseholds considered in the valuation. In other words, the error complained of here is to the assuming by the commission of an unlimited life of the depreciable property of The Ohio Fuel Gas Company except Account 211—Gas Well Construction, Account 212—Gas Well Equipment and No. 1 Leaseholds, and not allowing in the rate base leaseholds or gas lands actually owned and held by the company necessary for a supply of natural gas beyond a period of three years and two months from the effective date of the ordinance appealed from.

The commission found that it is the policy of the company to carry the reserve acreage. No criticism is made by the commission of the amount of reserve acreage actually held by the company. The undisputed evidence in the case by every witness competent to speak thereon is that all of the gas lands, including Classes Nos. 1, 2, 3 and 4, which except for the purposes only of appraisal are known in the industry as, respectively, operated and unoperated, are used and useful in the business of The Ohio Fuel Gas Company in supplying gas to The Columbus Gas and Fuel Company. If the Ohio Fuel Gas Company must pay delay rentals out of the six and one-half per cent. return on the rate base fixed in said proceeding, then the net return to The Ohio Fuel Gas Company on such rate base will be reduced to less than 4.24 per cent., with the effect that the gate rate therein fixed will result in confiscating and depriving The Ohio Fuel Gas Company of its property without due process of law and [fol. 21] denying to said company the equal protection of the law, contrary to said provisions of said Fourteenth Amendment.

(36) The elimination from said valuation of all going concern value. Such action of the commission is contrary to the evidence, is not supported by the evidence and will deprive The Ohio Fuel Gas Company of its property without due process of law and deny to said company the equal protection of the law, contrary to said provisions of said Fourteenth Amendment.

(37) The allowance of an inadequate amount for working capital, materials and supplies, insufficient for said The Ohio Fuel Gas Company to transact its business in the ordinary way, and contrary to the established practice of the commission of allowing a sum equal to five per centum of the present value of a utility's physical property for working capital, materials and supplies.

(38) The method of ascertaining the present value of the property described in Account 211—Gas Well Construction.

(39) The method of ascertaining the present value of the property described in Account 212—Gas Well Equipment.

(40) The depreciating below the cost of reproduction new of the undistributed construction expenditures (general overheads), for which the commission made no allowance for annual depreciation reserve.

Without admitting the right, power or authority of the commission to fix a valuation of the property of United [fol. 22] Fuel Gas Company in the above mentioned proceeding, The Columbus Gas and Fuel Company says there is error in said proceeding, findings, decision and order in respect of the valuation of the property of United Fuel Gas Company found by the commission in its said finding and order of October 3, 1932, in the following respects, to-wit:

(41) The commission had no right, power or authority to fix the value of any property of a public utility or other corporation situated outside of the state of Ohio and which, so far as these proceedings before the commission are concerned, does no business within the state of Ohio, even though the common stock of said utility or other corporation be owned by the same corporation which owns the common stock of plaintiff in error.

(42) The valuation found by the commission is contrary to the evidence, is not supported by the evidence, is manifestly against the weight of the evidence and is not the true value of all the property of said United Fuel Gas Company actually used and useful for the convenience of the public, excluding therefrom the value of any franchise or right to own, operate or enjoy the same in excess of the amount (exclusive of any tax or annual charge) actually paid to any political subdivision of the state or county as a consideration for the grant of such franchise or right; and exclusive of any value added thereto by reason of a monopoly or merger. The value so fixed by the commission will result in a confiscation of said United Fuel Gas Company's property and will deprive said company of its [fol. 23] property without due process of law and deny to said company the equal protection of the law, contrary to the provisions of Section one of Article fourteen of the Articles in Addition to and Amendment of the Constitution of the United States.

(43) The commission had no right, power or authority to eliminate all going concern value. The elimination of

going concern value is contrary to the evidence, is not supported by the evidence and will deprive said United Fuel Gas Company of its property without due process of law and deny to said company the equal protection of the law, contrary to said provisions of said Fourteenth Amendment.

(44) The allowance for construction overheads is insufficient and is contrary to the evidence.

(45) The valuation of the leaseholds is contrary to the evidence and contrary to law.

(46) The valuation of the gas well equipment is contrary to the evidence and contrary to law.

(47) The allocation percentages used by the commission for the purposes of apportioning or allocating the value of the property of United Fuel Gas Company to the business of The Ohio Fuel Gas Company are arbitrary and/or inconsistent with the findings of the commission.

(48) In the computation of the amount of working capital of United Fuel Gas Company allocable to the business of that company other than West Virginia regulated business.

In respect of the allowances for operating expenses, depreciation, amortization, rate of return, and the rate and [fol. 24] price to be charged, demanded, exacted and collected by plaintiff in error:

(49) Said findings and order, and each of them, are contrary to law, are not supported by the evidence, are contrary to the evidence and against the weight of the evidence, and are unreasonable, unlawful and manifestly in error and will deprive plaintiff in error of its property without due process of law and deny to plaintiff in error the equal protection of the law, and would therefore be repugnant to the Fourteenth Amendment of the Constitution of the United States.

(50) The rate and charge so fixed by the commission for the furnishing of natural gas service by The Columbus Gas and Fuel Company for public and private consumption in the city of Columbus, Ohio, are confiscatory

and deprive plaintiff in error of its property without due process of law and deny to plaintiff in error the equal protection of the law, contrary to the provisions of Section one of Article Fourteen of the Articles in Addition to and Amendment of the Constitution of the United States. It is the contention of plaintiff in error that each and all of the grounds which plaintiff in error has set out in this petition in error, which are hereby adopted as if fully repeated here, both separately and collectively deprive plaintiff in error of its property without due process of law and deny to plaintiff in error the equal protection of the law, contrary to said provisions of said Fourteenth Amendment.

(51) The admitting, receiving and/or relying upon the evidence, or any part thereof, of the witness Harry R. [fol. 25] Allensworth for the reason that said Allensworth did not possess the necessary training, education and/or experience which gave him any peculiar knowledge in respect of the subjects and matters to which he testified.

(52) The overruling of objections to the testimony and exhibits introduced by and through the witness Harry R. Allensworth.

(53) The admitting, receiving and/or relying upon the evidence, or any part thereof, of the witness J. Paul Blundon for the reason that said Blundon did not possess the necessary training, education and/or experience which gave him any peculiar knowledge in respect of the subjects and matters to which he testified.

(54) The overruling of objections to the testimony and exhibits introduced by and through the witness J. Paul Blundon, and especially to that testimony and those exhibits of said Blundon which were predicated upon the testimony and exhibits of the witness Harry R. Allensworth.

(55) The commission failed to fix and determine the just and reasonable rate to be charged and collected by plaintiff in error for its natural gas during the period fixed by the ordinance appealed from.

(56) The rate so fixed is insufficient to yield plaintiff in error reasonable compensation for the service.

(57) The rate so fixed does not give due regard to the value of plaintiff in error's property actually used and useful for the convenience of the public and to the necessity of making reservations from income for surplus, de-
[fol. 26] preciation and contingencies and such other matters as may be proper.

(58) The finding and order of the commission in respect of the amount to be paid by The Columbus Gas and Fuel Company to The Ohio Fuel Gas Company for natural gas at the Columbus gateways violates Section 10 of Article 1 of the Constitution of the United States by impairing the obligation of the contract, Company Exhibit No. 11, entered into as of the first day of July, 1929, between The Columbus Gas and Fuel Company and The Ohio Fuel Gas Company.

(59) The finding and order of the commission in respect of the amount to be paid by The Columbus Gas and Fuel Company to The Ohio Fuel Gas Company for natural gas at the Columbus gateways violates Section 10 of Article 1 of the Constitution of the United States by impairing the obligations of the contract, Company Exhibit No. 58, made on the thirty-first day of October, 1927, by and between United Fuel Gas Company and The Ohio Fuel Gas Company.

(60) The finding and order of the commission in respect of the amount to be paid by The Columbus Gas and Fuel Company to The Ohio Fuel Gas Company for natural gas at the Columbus gateways is repugnant to the power given to Congress by Section 8 of Article 1 of the Constitution of the United States to regulate commerce among the several states, in that an attempt is thereby made to regulate the price for natural gas to be paid by The Ohio Fuel Gas Company to United Fuel Gas Company for natural gas
[fol. 27] produced in the states of West Virginia and Kentucky and transported in interstate commerce from points in the state of West Virginia to the gateway at Columbus, Ohio, where it is delivered by The Ohio Fuel Gas Company to The Columbus Gas and Fuel Company.

(61) The rate of return of 6.5 per centum per annum allowed to The Columbus Gas and Fuel Company is insufficient and confiscatory as a return upon an admittedly hazardous undertaking.

(62) The rate and charge so fixed by the commission for the furnishing of natural gas service by The Columbus Gas and Fuel Company for public and private consumption in the city of Columbus, Ohio, will not permit a return to said company on the value of the rate base found by the commission for said company's property of more than 4.86 per centum per annum. The rate base so found for the used and useful property of The Columbus Gas and Fuel Company is $4,027,647.00. The net income available for return under the commission's allowances for operating expenses and other charges made by the commission is the sum of $195,899.00.

(63) The rate and charge so fixed by the commission for the furnishing of natural gas service by The Columbus Gas and Fuel Company for public and private consumption in the city of Columbus, Ohio, do not allow either, any two or all of said The Columbus Gas and Fuel Company, The Ohio Fuel Gas Company or United Fuel Gas Company an annual return of 6.5 per centum on the respective rate bases of said companies found, allowed and ordered by the commission.

(64) The crediting of the minimum charges of The Co- [fol. 28] lumbus Gas and Fuel Company twice; that is, the commission deducted $43,980.00 minimum charges, whereas the only evidence in said proceeding (page 9 of City Exhibit No. 69), shows the total amount of minimum charges to have been $21,989.96.

(65) If the commission had taken its total allowance to The Columbus Gas and Fuel Company for operating expenses, taxes and return and correctly computed the commission's own allowances, without a duplication of the minimum charges credit, the commission would have arrived at a rate of 55.46 cents per thousand cubic feet.

(66) The deducting of discounts and penalties and minimum charges before calculating the allowance to The Columbus Gas and Fuel Company for excise taxes. The laws of this state require excise taxes to be paid on the entire gross receipts of a natural gas company, which term "gross receipts" is defined in Section 5417 of the General Code of Ohio.

(67) The using of the rate of 1.35 per centum as the rate to be allowed to The Columbus Gas and Fuel Company for excise tax, where as the excise tax rate in effect at the time of the finding and order was and will be throughout the term of the ordinance 2.35 per centum.

(68) The computation of the public utilities tax to be paid by The Columbus Gas and Fuel Company.

(69) Both in the rate and method of computing the income tax of The Columbus Gas and Fuel Company. The commission allowed a rate of 12 per centum instead of 13¾ per centum, and in computing the tax deducted as a credit bond and other interest paid by the company but not allowed by the commission as expenses.

[fol. 29] (70) In the computation of the rate to be charged by The Columbus Gas and Fuel Company for natural gas within the city of Columbus, in duplicating the credit to operating expenses for minimum charges, in applying an incorrect rate for excise taxes to an incorrect amount of gross receipts and in applying the public utilities tax to an incorrect amount of gross receipts and in applying an incorrect rate for federal income tax to an incorrect amount of net income. If the commission had taken only the proper credit for minimum charges, and had correctly computed the excise and public utilities taxes on gross receipts as required by law and allowed the proper rate for federal income tax without deducting any credit on account of bond or other interest not allowed as an expense, the commission would have arrived at a rate of 56.38 cents per thousand cubic feet.

(71) The commission failed to allow The Columbus Gas and Fuel Company proper and adequate annual charges for depreciation of the several classes of its property over and above the cost and expenses of maintenance to keep its property in a state of efficiency corresponding to the progress of the art or industry and necessary for the purpose of renewing, restoring, replacing and/or substituting depreciated property in order to keep the plant in a state of efficiency.

(72) In computing the allowance for depreciation on the property of The Columbus Gas and Fuel Company, errors

have been made in failing to consider depreciable property valued by the commission itself at $421,341.00 which, if corrected, will result in an annual allowance to The Colum-
[fol. 30] bus Gas and Fuel Company of $56,881.00 instead of $51,154.00.

(73) The allowing of only 1.5 per centum for depreciation, amounting to $51,154.00, when according to the only competent evidence submitted in said proceeding this allowance should have been not less than 4 per centum or $174,880.00 for The Columbus Gas and Fuel Company.

(74) In not allowing depreciation on overheads applicable to those items of property which are depreciated in the valuation of The Columbus Gas and Fuel Company.

(75) There is no evidence to support the finding and order of the commission reducing the annual allowance to The Columbus Gas and Fuel Company for depreciation to the sum of $51,154.00 in the face of the fact that it was conceded by the city of Columbus in City Exhibit No. 69 that the company was entitled to an annual depreciation allowance of at least $88,695.03.

(76) In allowing only 5 per centum for line loss, there being no competent evidence offered to show that the line loss of The Columbus Gas and Fuel Company was less than 6.5 per centum.

(77) In adopting a fictitious figure of 5,671,639 M c. f. as being the amount of gas sold by The Columbus Gas and Fuel Company inside the city of Columbus for the calendar year 1929, when the same should be 5,848,495 M c. f.

(78) In holding that the so-called collar leak clamps had been valued in the cost of reproduction of The Columbus Gas and Fuel Company. The undisputed evidence shows this to be an item of maintenance and the allowance for Account No. 401 should have been for $50,856.82 instead [fol. 31] of $12,871.00. City Exhibit No. 69 claims that the expense of these clamps should have been amortized over a five year period and allows $22,582.73 per year as against the commission's allowance of $12,871.00 per year.

(79) In deducting $23,676.90 from Account No. 422 of The Columbus Gas and Fuel Company, being the salaries paid to appliance salesmen for load building purposes, and

resulting in the substitution of the judgment of the commission for that of the company in a matter of business management.

(80) In eliminating the sum of $6,021.48, or any part thereof, from Account No. 457 of The Columbus Gas and Fuel Company on account of home service department expenses. This amounted to a substitution of the judgment of the commission for that of the responsible officers of the company on a question of management.

(81) In refusing to allow anything for rate case expense to The Columbus Gas and Fuel Company on the ground that this case had gone far afield. The only reasons for this case going at all afield were the sustaining by the commission of the city's motions to bring in the valuations of The Ohio Fuel Gas Company and the United Fuel Gas Company and the preparation by The Columbus Gas and Fuel Company of many exhibits for the city of Columbus.

(82) In allowing to The Columbus Gas and Fuel Company only $120,611.00 distribution system expense, when the same should have been not less than $158,749.00.

(83) In fixing the cost of distribution of natural gas within the city of Columbus by The Columbus Gas and Fuel Company at 16 cents instead of 26.86 cents.

[fol. 32] (84) In fixing the price of natural gas which The Columbus Gas and Fuel Company may pay to The Ohio Fuel Gas Company at 39.022 cents instead of at not less than 45 cents, as fixed by the contract, Company Exhibit No. 11.

(85) In fixing the rate for natural gas which may be charged by The Columbus Gas and Fuel Company at the consumer's meter in the city of Columbus at 55 cents, instead of fixing it at not less than 69.59 cents.

(86) In finding, holding and/or ordering that the rates and charges fixed in said order are just and reasonable for the furnishing of natural gas service by The Columbus Gas and Fuel Company for public and private consumption in the city of Columbus, Ohio, whereas the same are altogether unjust and unreasonable.

(87) In finding, holding and/or ordering

"the value of the several kinds and classes of property of The Columbus Gas and Fuel Company, used and useful for the convenience of the public in the furnishing of natural gas service for public and private consumption in the city of Columbus and of said properties as a whole, as of December 31, 1929, to be the sum of $4,029,647.00, as more fully set forth in Exhibit 'C' appended to the finding of facts filed herein, which exhibit hereby is made a part of this entry by adoption, as fully as if the same were here set forth in its entirety."

(88) In finding, holding and/or ordering

"that the reasonable costs and expenses of The Columbus Gas and Fuel Company for the furnishing of its natural gas service to consumers within the city of Columbus, Ohio, based upon a consumption of 5,671,639,000 cubic feet of natural gas for the calendar year ended December 31, [fol. 33] 1929, were as set forth in Exhibit 'C', Sheet 1, appended to the finding of facts filed herein, which exhibit hereby is made a part of this order by adoption."

(89) In finding, holding and/or ordering

"that the rate per thousand cubic feet of 55¢, with an additional charge of 5¢ per thousand cubic feet, if monthly bills are not paid within a fixed time, and a monthly minimum charge of 75¢, without discount, are just and reasonable rates and charges for the service furnished and supplied by said appellant in the city of Columbus, Ohio."

(90) In finding, holding and/or ordering

"that the gross and net revenues derived by said The Columbus Gas and Fuel Company for furnishing natural gas for public and private consumption, in the city of Columbus, at the rates and charges hereinbefore found by the commission to be just and reasonable will be sufficient to yield said The Columbus Gas and Fuel Company a reasonable compensation for such service."

(91) In ordering

"that the rates and charges hereinbefore set forth which are found and determined by this commission to be just and reasonable for the furnishing of natural gas service by The

Columbus Gas and Fuel Company for public and private consumption in the city of Columbus, be, and hereby they are substituted for the rates and charges fixed by said ordinance, which the commission has found to be unjust and unreasonable, and the commission having made inquiry and investigation with respect to the ability of said The Columbus Gas and Fuel Company to furnish natural gas for public and private consumption in the city of Columbus, as fixed by said ordinance, and having found that said The [fol. 34] Columbus Gas and Fuel Company will be able to furnish its said product in said city for said period, it is therefore further,

Ordered, that the rates and charges not greater than or in excess of the rates and charges for the furnishing of natural gas to the city and private consumers, and to the public buildings, grounds, streets, alleys and market places in the city of Columbus, Ohio, for public and private consumption, which the commission herein has found to be just and reasonable, be, and remain in force and effect for a period of five years from and after the effective date of the ordinance herein complained of and appealed from, and said The Columbus Gas and Fuel Company hereby is notified, directed and required to furnish its product to its consumers thereof, public and private, in the city of Columbus, Ohio, for said period."

In fixing the gate rate to be paid by The Columbus Gas and Fuel Company to The Ohio Fuel Gas Company in the following particulars set forth in grounds 92 to 127, inclusive, to wit (each separately):

(92) The commission disregarded the agreement made as of the first day of July, 1929, between The Ohio Fuel Gas Company and The Columbus Gas and Fuel Company (being Company Exhibit No. 11), in the face of the evidence:

(a) that The Ohio Fuel Gas Company charged other unrelated companies in the state of Ohio greater prices at the city gate, which greater prices have been allowed by said commission in recent rate cases;

(b) that gate rates charged by other companies in the state of Ohio were higher than the rate fixed in said contract (Company Exhibit No. 11), as shown by Company Exhibits 13 and 13-A;

(c) that the combined income available for amortization, [fol. 35] depreciation and dividends of The Ohio Fuel Gas Company, The Columbus Gas and Fuel Company and The Federal Gas and Fuel Company amounted to 7.99 per centum on the combined fixed capital of said companies as shown by the books of the respective companies;

(d) that the combined income available for amortization, depreciation and dividends of The Ohio Fuel Gas Company, The Northwestern Ohio Natural Gas Company, The Columbus Gas and Fuel Company, The Federal Gas and Fuel Company, The Springfield Gas Company and The Edgewater Gas & Light Company (being all of the companies known as the Columbus group) amounted to 7.90 per centum on the combined fixed capital of said companies as shown by the books of the respective companies;

(e) that the United Fuel Gas Company charged to the Hope Natural Gas Company, an unrelated company, a price equal to the price charged by United Fuel Gas Company to The Ohio Fuel Gas Company for similar quantities of gas as shown by Company Exhibit No. 59.

(f) that the state and federal courts in West Virginia, as well as the Public Service Commission of West Virginia, have forbidden the United Fuel Gas Company from discriminating in favor of a related company as against an unrelated company. As shown by Company Exhibit No. 59, the charge to the Hope Natural Gas Company amounts to an average of more than 26½ cents per M. c. f.

(93) The commission is and was without any authority to make any finding, decision or order in said complaint and appeal in respect of the value of the property of The Ohio Fuel Gas Company.

(94) The commission is and was without any authority to make any finding, decision or order in said complaint and appeal in respect of the value of the property of United Fuel Gas Company.

[fol. 36] (95) The commission is and was without any authority to make any finding, decision or order in said complaint and appeal in respect of the operating expenses, rate of return or price charged for natural gas by The Ohio Fuel Gas Company.

(96) The commission is and was without any authority to make any finding, decision or order in said complaint and appeal in respect of the operating expenses, rate of return or price charged for natural gas by United Fuel Gas Company.

(97) The value found of the property of said The Ohio Fuel Gas Company, if permitted to stand, will result in preventing plaintiff in error from paying to said The Ohio Fuel Gas Company a reasonable and/or fair price for natural gas at the Columbus gateway.

(98) The value found of the property of said United Fuel Gas Company, if permitted to stand, will result in preventing said The Ohio Fuel Gas Company from paying to said United Fuel Gas Company a reasonable and/or fair price for natural gas.

(99) If said valuation, finding and order should be held to be binding upon The Ohio Fuel Gas Company, then said valuation, finding and order will deprive said The Ohio Fuel Gas Company of its property without due process of law, and deny to said company the equal protection of the law, and would therefore be repugnant to the Fourteenth Amendment of the Constitution of the United States.

(100) If said valuation, finding and order should be held to be binding upon United Fuel Gas Company, then said [fol. 37] valuation, finding and order will deprive said United Fuel Gas Company of its property without due process of law, and deny to said company the equal protection of the law, and would therefore be repugnant to the Fourteenth Amendment of the Constitution of the United States.

(101) The commission failed to allow as a part of the compensation to be paid The Ohio Fuel Gas Company proper and adequate annual charges for depreciation of the several classes of its property over and above the cost and expense of maintenance to keep its property in a state of efficiency, corresponding to the progress of the art or industry and necessary for the purpose of renewing, restoring, replacing and/or substituting depreciated property in order to keep the plant in a state of efficiency.

(102) The commission failed to allow to The Ohio Fuel Gas Company either depreciation or amortization on the property in Accounts Nos. 206 and 220—Rights of Way.

(103) The commission failed to make any annual allowance to The Ohio Fuel Gas Company for depreciation or amortization on undistributed construction expenditures (overheads)—Accounts 258 to 266, inclusive, although in arriving at the present value of said undistributed construction expenditures the commission made a deduction for observed depreciation.

(104) The commission failed to allow as a part of the compensation to be paid The Ohio Fuel Gas Company proper and adequate annual charges for amortization of the property of The Ohio Fuel Gas Company necessary to insure a return to the stockholders of said company of their investment.

[fol. 38] (105) The finding of the commission requires the allowance for replacement of No. 1 leaseholds and the property represented by Accounts Nos. 211 and 212 to be kept in a revolving fund. Such revolving fund should have been based upon a valuation at least sufficient for the period for which the commission requires The Columbus Gas and Fuel Company to render service under said ordinance.

(106) The commission disregarded the agreement made on the thirty-first day of October, 1927, by and between United Fuel Gas Company and The Ohio Fuel Gas Company (being Company Exhibit No. 58) in the face of the evidence:

(a) that United Fuel Gas Company charged the Hope Natural Gas Company, an unrelated company, a price equal to the price charged by United Fuel Gas Company to The Ohio Fuel Gas Company for similar quantities of gas at similar points of delivery, as shown by Company Exhibit No. 59;

(b) that the state and federal courts in West Virginia, as well as the Public Service Commission of West Virginia, have forbidden the United Fuel Gas Company from discriminating in favor of a related company as against an unrelated company.

The foregoing action of the commission resulted in allowing in the expense of The Ohio Fuel Gas Company only $3,413,162.00 for gas purchased from United Fuel Gas Company, when the amount should have been $4,172,362.00.

(107) The commission refused to allow the sum of $1,684,913.00, or any other sum, in Account No. 360 for lease rentals paid by The Ohio Fuel Gas Company. The commission also refused to allow any return on the value [fol. 39] of the property on which lease rentals were and are paid. If the Ohio Fuel Gas Company must pay its lease rentals out of its return on property other than said leaseholds, such return on the valuation of The Ohio Fuel Gas Company's property found by the commission in said proceeding will be reduced to an annual rate of 4.2395 per centum without taking into consideration the proper allowance for excise tax, and will deprive The Ohio Fuel Gas Company of its property without due process of law and deny to said company the equal protection of the law, contrary to the Fourteenth Amendment to the Constitution of the United States.

(108) In arriving at the per cent of general administrative and other general expense applicable to the production and transmission systems, the commission omitted consideration of the amount paid by The Ohio Fuel Gas Company for lease rentals.

(109) The commission limited the leasehold valuation of The Ohio Fuel Gas Company to No. 1 acreage and failed to take into consideration the resulting increased cost of production and transmission, as shown by the uncontradicted evidence. The uncontradicted evidence shows that it would be neither economical nor practical to attempt to operate The Ohio Fuel Gas Company during the term of the ordinance appealed from with No. 1 leaseholds only. As shown by the uncontradicted testimony of practical natural gas men, such practice would result in increasing the cost of production. More wells would have to be drilled on No. 1 acreage to get the necessary volume of gas, with the result that the rock pressure of all the wells would de- [fol. 40] crease, thus requiring additional pumping and compressor equipment: Offset wells would have to be drilled to protect the No. 1 acreage from drainage, if the company did not control Classes 2, 3 and 4. It would be necessary to reduce the line pressure in order to get the gas out of the ground and then to bring the gas from the low pressure necessary to take it out of the ground to the high pressure necessary for the transmission of it to the mar-

kets. The cost of natural gas thus obtained would amount to a prohibitive figure—much greater than the price allowed herein to The Columbus Gas and Fuel Company to be paid to The Ohio Fuel Gas Company for natural gas at the Columbus gateway.

(110) The commission found that The Ohio Fuel Gas Company has an unlimited supply of gas due to the ownership by said company of Classes Nos. 1, 2, 3 and 4 of gas leaseholds, and gave this ownership as the reason for not allowing amortization of plant. The commission further based its allowance of 6.5 per centum as the rate of return on the present value of the property of The Ohio Fuel Gas Company upon the assumption that said company was the owner of Classes Nos. 1, 2, 3 and 4 of gas leaseholds, which assured the safety of investment and/or rendered the plant investment of said The Ohio Fuel Gas Company non-hazardous. The commission found that the present No. 1 leaseholds, for which class only a valuation was allowed, would last but three years and two months from the date certain herein, to wit, December 31, 1929. Notwithstanding the foregoing, the commission refused to allow either a return on the investment or the carrying charges for [fol. 41] any of the reserve acreage known as Classes Nos. 2, 3 and 4 leaseholds which the commission found contains the unlimited supply of gas.

(111) The commission allowed The Ohio Fuel Gas Company only $391,979.00 for general administrative expense—Accounts 427 to 437, when the only competent evidence in said proceeding showed that such annual expenditure was $583,799.00.

(112) The commission allowed The Ohio Fuel Gas Company only $199,347.00 for other general expense—Accounts 442 to 473, when the only competent evidence in said proceeding showed that such annual expenditure was $272,835.00.

(113) In arriving at the rate of return, labor prices and labor performance, the commission recognized trends and present-day conditions, but allowed only 1.35 per centum for excise tax, whereas the law in effect at the time of said finding and order required The Ohio Fuel Gas Company to pay 2.35 per centum on its gross receipts.

(114) The commission allowed only 12 per centum for federal income tax, whereas the allowance should have been 13¾ per centum for both The Ohio Fuel Gas Company and United Fuel Gas Company, without any deduction for bond or other interest not allowed or considered by the commission as operating expense.

(115) The commission allowed only 6.5 per centum return on the respective rate bases found for each The Ohio Fuel Gas Company and United Fuel Gas Company, whereas such return for each of said companies should not have been less than 8 per centum.

[fol. 42] (116) The commission did not give due regard to the necessity of making reservations from income for surplus and contingencies of either The Columbus Gas and Fuel Company, The Ohio Fuel Gas Company or United Fuel Gas Company.

(117) While the commission deducted from the operating expenses of The Columbus Gas and Fuel Company and The Ohio Fuel Gas Company discounts obtained on account of cash payments by said companies, the commission has not allowed adequate working capital with which to take advantage of such discounts in the future.

(118) While the commission found and held that it would follow the allowances of expenses and return on investment made by the Public Service Commission of West Virginia in respect of United Fuel Gas Company, yet the commission reduced the following allowances of the Public Service Commission of West Virginia:

(a) depreciation allowance on general property from five per cent to 1.12 per cent;

(b) return on the rate base from 8 per cent (or under the temporary rate 7.23 per cent) to 6.5 per cent.

(119) The allocation percentage used by this commission for the purposes of apportioning or allocating the expenses of United Fuel Gas Company to the business of The Ohio Fuel Gas Company are arbitrary and/or inconsistent with the findings of this commission.

[fol. 43] (120) The commission erred in finding, holding and/or ordering

"That the value of all of the property of The Ohio Fuel Gas Company, exclusive of distribution plant, as of December 31, 1929, is the sum of $74,538,280.00, as fully set forth in Exhibit 'B' appended to the finding of facts filed herein, which exhibit hereby is made a part of this order by adoption."

(121) The commission erred in finding, holding and/or ordering

"That the value of all of the property of The United Fuel Gas Company, exclusive of distribution plant, as of December 31, 1929, is the sum of $37,422,112.00, as set out in Exhibit 'A,' which exhibit hereby is made part of this order by adoption."

(122) The commission erred in finding, holding and/or ordering

"That for the same fiscal period, the reasonable operating expenses of The Ohio Fuel — Company and of The United Fuel Gas Company were as set forth in Exhibits 'B,' Sheet 1, and 'A,' Sheet 1, attached to the finding of facts filed herein, which exhibits are hereby made parts of this order by adoption."

(123) The commission erred in finding, holding and/or ordering

"That the reasonable and just rate to be paid for natural gas by The Ohio Fuel Gas Company to producing companies at the Ohio river when such gas is to be distributed in the city of Columbus, Ohio, is the sum of 22¢ per thousand cubic feet."

[fol. 44] (124) The commission erred in finding, holding and/or ordering

"That the reasonable and just rate to be paid for natural gas by The Columbus Gas and Fuel Company to The Ohio Fuel Gas Company at the point of delivery at the city of Columbus, Ohio, is the sum of 39¢ per thousand cubic feet."

(125) The commission erred in excluding from its consideration

"that evidence which seeks to establish the fairness of the gate rate by proof that the price was the lowest that could

be obtained by the distributing company from the supplying company or from any other available source of supply. Under this rule much testimony presented by the company to the effect that the gate rate at Columbus was the same or lower than that charged at other places, and that there was no other source of supply to the distributing company, must be excluded from our consideration."

(126) The commission erred in holding that evidence of the value of productive acreage (i. e., Class No. 1)

"could not be based upon the price between a willing buyer and a willing seller. In the very nature of the operation, companies have a monopoly within their own field, and further the value of the land in the market would depend upon the price which the regulated company may be permitted to charge to its customers."

in face of the undisputed evidence showing that the gas lands of The Ohio Fuel Gas Company are contiguous to the gas lands of other and unrelated natural gas producers and are interspersed with gas lands belonging to other and unrelated natural gas producers.

[fol. 45] (127) The commission erred in finding that Judge Hough had determined

"that the rate to the consumer should be 48 cents, 65% of which, amounting to 31.20 cents was fixed as the gate rate, and 35%, amounting to 16.80 cents, was the distribution charge.",

whereas the record in the Federal Court case in evidence here shows that Judge Hough did not attempt to fix any gate rate but for the purposes of the 48 cent retail rate which he fixed assumed the validity of the contract between The Columbus Gas and Fuel Company and The Ohio Fuel Gas Company, which contract provided for a division of 65 per cent of the retail rate to The Ohio Fuel Gas Company.

(128) Plaintiff in error further says that said defendant in error erred in failing to make changes in its valuations of property in the particulars set out in the protest of valu-

ations filed in said proceeding by plaintiff in error, and in making said valuations final without said changes.

(129) The commission erred in finding, holding and/or ordering

"That the reasonable annual charge to be made by The Columbus Gas and Fuel Company for and on account of necessary appropriations to its depreciation reserve account will be one and one-half per cent of the present value of its depreciable property;".

(130) The commission erred in finding, holding and/or ordering

"That a reasonable annual rate of return to be allowed The Columbus Gas and Fuel Company for the furnishing [fol. 46] of natural gas service in the city of Columbus, Ohio, will be 6½% of the aforesaid value of its property, used and useful for the furnishing of natural gas service in the city of Columbus, Ohio;".

(131) The rate of return allowed neither assures nor permits confidence in the financial soundness of plaintiff in error or of The Ohio Fuel Gas Company or of United Fuel Gas Company and is inadequate, under efficient and economical management, to maintain and support plaintiff in error's credit and/or the credit of said other companies and to enable plaintiff in error or said other companies to raise the money necessary for the proper discharge of plaintiff in error's public duties.

(132) Plaintiff in error further says that on the twenty-eighth day of November, 1932, the defendant in error the Public Utilities Commission of Ohio made, filed and entered in writing in said proceeding the following order, to wit:

"Ordered, that if either party hereto, within the period prescribed by statute, shall appeal from said finding and order to the Supreme Court, the effective date of the finding and order made and entered herein October 3, 1932, be, and hereby the same is extended to February 1, 1933, or such earlier date as the Supreme Court of Ohio may order."

Plaintiff in error further says that on the twenty-eighth day of November, 1932, it filed with the said commission its application by petition for rehearing of said order just

above quoted, setting forth specifically the grounds upon which plaintiff in error considered said decision or order [fol. 47] to be unreasonable and unlawful, which said application was denied by an order in said proceeding on the twenty-eighth day of November, 1932, to which order the plaintiff in error then and there excepted.

Plaintiff in error says that there is error in said proceeding, decision and/or order of the defendant in error prejudicial to plaintiff in error, and affecting materially its substantial rights and said decision and/or order is unlawful and unreasonable in that the commission has found in said proceeding:

"That the rate per thousand cubic feet of 48¢, with an additional charge of 5¢ per thousand cubic feet, if the monthly bills are not paid within a fixed time, with a minimum charge of 75¢ per month without discount, fixed and prescribed by said ordinance, are unreasonable and unjust and ought not to be ratified and confirmed, and that just and reasonable rates and charges should be substituted therefor;

"That the rate per thousand cubic feet of 55¢, with an additional charge of 5¢ per thousand cubic feet, if monthly bills are not paid within a fixed time, and a monthly minimum charge of 75¢, without discount, are just and reasonable rates and charges for the service furnished and supplied by said appellant in the city of Columbus, Ohio."

And said commission has ordered

"That the rates and charges hereinbefore set forth which are found and determined by this commission to be just and reasonable for the furnishing of natural gas service by The Columbus Gas and Fuel Company for public and private consumption in the city of Columbus, be, and hereby they are substituted for the rates and charges fixed by said ordinance, which the commission has found to be unjust and unreasonable."

[fol. 48] The suspension of the effective date of said order results in preventing The Columbus Gas and Fuel Company from collecting the rate which the commission has found to be the just and reasonable rate for natural gas in the city of Columbus, Ohio, until the first day of February,

1933, or such earlier date as the Supreme Court of Ohio may order.

(133) There are other errors apparent on the face of the record prejudicial to the rights of plaintiff in error to which its exceptions are noted in the record.

Wherefore, plaintiff in error prays that said defendant in error may be required forthwith to transmit to the clerk of this court a transcript of the journal entries, original papers, or transcripts thereof, and a certified transcript of all the evidence adduced upon the hearing before said commission in the proceedings complained of; that the same may be filed in this court, and that said proceedings, findings and orders of the commission may be reversed and vacated or modified, and that this plaintiff in error may be restored to all things that it has lost by reason thereof.

Edward C. Turner, Albert M. Calland, Attorneys for Plaintiff in Error.

Waiver

The Public Utilities Commission of Ohio hereby waives the issuance and service of summons in error and enters its appearance in the above entitled cause.

Signed at Columbus, Ohio, this twenty-eighth day of November, 1932.

The Public Utilities Commission of Ohio, by E. J. Hopple, Chairman.

[fol. 49] In Supreme Court of Ohio

No. 23868

The City of Columbus, Ohio, Plaintiff in Error,

vs.

The Public Utilities Commission of Ohio, Defendant in Error

Error to the Public Utilities Commission of Ohio

Petition in Error

Now comes the City of Columbus, a municipal corporation under the laws of Ohio, hereinafter sometimes referred

to as the City, and, complaining of defendant in error, The Public Utilities Commission of Ohio, hereinafter sometimes referred to as the Commission, states:

That on September 3, 1929, the said City pased an ordinance entitled "An Ordinance No. 645-29—To regulate the price that may be charged for natural gas in the City of Columbus during the period of five years from the 12th day of November, 1929, and providing for the submission of this ordinance to a referendum vote at an election to be held November 5, 1929."

That said Ordinance No. 645-29 was submitted to a vote of the qualified electors of the City and was approved by a majority of those voting thereon at the election held on November 5, 1929, and that said ordinance by its terms became effective from and after November 12, 1929.

That The Columbus Gas and Fuel Company, a public utility, distributing natural gas for light, heat and power purposes to consumers in the said City, appealed from said ordinance on December 31, 1929, by filing with The Public Utilities Commission of Ohio its complaint in writing against the said ordinance.

[fol. 50] That on October 3, 1932, the said Commission made and entered a decision and final order in said cause then pending before it, entitled "In the matter of the complaint and appeal of The Columbus Gas and Fuel Company from an ordinance of the City of Columbus to regulate the price that may be charged for natural gas in the City of Columbus", being Case Number 5935 on the dockets of the said Commission, said order being against the interests of the said City in said cause, a true copy of which order is hereto attached, marked "Exhibit A" and made a part hereof.

That, subsequent to the entering of said final order, the said City, as defendant in said proceedings before the said Commission, duly filed its application for rehearing, as required by law, which application was filed more than ten days before the effective date of said final order, to-wit, on October 19, 1932, and that said application for rehearing specifically sets forth the grounds on which the said City considers the order and decision of said Commission to be unreasonable and unlawful.

That thereafter, on October 26, 1932, the said City filed a formal motion with the said Commission, moving said Com-

mission to vacate, set aside and hold for naught each and every part of its certain findings and order filed and entered in this cause on October 3, 1932, for the reasons and upon the grounds stated therein as follows:

"The Commission, by said order, irregularly and unlawfully, in direct violation of the statutes, made certain findings and fixed a certain rate that may be charged and collected for natural gas by The Columbus Gas and Fuel Company within the City of Columbus, without having first fixed, filed and/or announced tentative valuations of the properties, to which any interested party might file objections and/or protests and be heard thereon, and made said findings and fixed said rate without any compliance of any kind with Section 499-12 of the General Code of Ohio and other sections of the statutes applicable thereto, thereby preventing the City of Columbus from exercising any of [fol. 51] the rights and privileges granted it by the said statutes in respect to tentative valuations thereunder.

Said City further respectfully suggests to the Commission that, upon the vacation of said findings and of said order of October 3, 1932, an order and/or finding be filed and entered in due course, setting forth the tentative valuations of the properties used and useful in furnishing natural gas to the City of Columbus as of December 31, 1929, in compliance with said Section 499-12 and other sections of the General Code of Ohio, of which due notice should be given to all parties as required by statute."

The said City, by said formal motion, further asked the said Commission forthwith to vacate, set aside and hold for naught said order and said findings of October 3, 1932, and each and every part thereof, and thereafter, in due course, find and file tentative valuations of the properties, in accordance with said Section 499-12 and other sections of the General Code of Ohio, to the end that the said City might not be deprived of the rights accruing to it by virtue of the statutes of the State of Ohio.

That thereafter, and within thirty days of the date of the said final order, the said Commission, having failed to rule upon either the application for rehearing or the motion to vacate, the said City filed with said Commission a protest of valuation in accordance with Section 499-12 of the General Code of Ohio.

That on November 28, 1932, the said Commission overruled, set aside and held for naught each and every motion, application and protest of said City, to which exceptions were duly noted of record.

That on November 30, 1932, the said City duly filed its application for a rehearing on the Commission's said finding and order of November 28, 1932, which said application the said Commission denied, rejected and overruled on December 1, 1932, to which action of the Commission the said City entered its exceptions on the record.

[fol. 52] The said City says that the said final orders of the said Commission are unlawful and unreasonable and that there is manifest error in the proceedings before said Commission and in the said findings and orders entered therein in the following particulars, to-wit:

I. The Commission erred in determining and fixing the rates and charges for furnishing natural gas service in the City of Columbus and in substituting the same for the rates and charges fixed by the said Ordinance, before its tentative valuations of the utility properties had been made and/or had become final and before the exceptions of the City of Columbus to the said tentative valuations had been heard and finally adjudicated and before there had been substantial compliance with Section 499-12 of the General Code of Ohio.

II. The Commission erred in finding, holding and/or ordering that the value of the several kinds and classes of property of The Columbus Gas and Fuel Company, used and useful for the convenience of the public in the furnishing of natural gas service for public and private consumption in the City of Columbus and of said properties as a whole, as of December 31, 1929, to be the sum of $4,029,647.00, as more fully set forth in Exhibit "C" appended to the finding of facts filed herein, which exhibit hereby is made a part of this entry by adoption as fully as if the same were here set forth in its entirety.

III. The Commission erred in finding, holding and/or ordering that the value of all of the property of The Ohio Fuel Gas Company, exclusive of distribution plant, as of December 31, 1929, is the sum of $74,538,280.00, as fully set forth in Exhibit "B" appended to the finding of facts filed

herein, which exhibit hereby is made a part of this order by adoption.

IV. The Commission erred in finding, holding and/or ordering that the value of all of the property of The United Fuel Gas Company, exclusive of distribution plant, as of December 31, 1929, is the sum of $37,422,112.00, as set out in Exhibit "A", which exhibit hereby is made a part of this order by adoption.

V. The Commission erred in finding, holding and/or ordering that the reasonable costs and expenses of The Columbus Gas and Fuel Company for the furnishing of its natural gas service to consumers within the city of Columbus, Ohio, based upon a consumption of 5,671,639,000 cubic feet of natural gas for the calendar year ended December 31, 1929, were as set forth in Exhibit "C", Sheet 1, appended to the finding of facts filed herein, which exhibit hereby is made a part of this order by adoption.

VI. The Commission erred in finding, holding and/or ordering that for the same fiscal period, the reasonable op- [fol. 53] erating expenses of The Ohio Fuel Company and of The United Fuel Gas Company were as set forth in Exhibit "B", Sheet 1, and "A", Sheet 1, attached to the finding of facts filed herein, which exhibits are hereby made parts of this order by adoption.

VII. The Commission erred in finding that the rate per thousand cubic feet of 48¢, with an additional charge of 5¢ per thousand cubic feet, if the monthly bills are not paid within a fixed time, with a minimum charge of 75¢ per month without discount, fixed and prescribed by said Ordinance, are unreasonable and unjust and ought not to be ratified and confirmed, and that just and reasonable rates and charges should be substituted therefor.

VIII. The Commission erred in finding that the rate per thousand cubic feet of 55¢, with an additional charge of 5¢ per thousand cubic feet, if monthly bills are not paid within a fixed time, and a monthly minimum charge of 75¢, without discount, are just and reasonable rates and charges for the service furnished and supplied by said appellant in the City of Columbus, Ohio.

IX. The Commission erred in receiving, considering, accepting, hearing and/or applying, in its valuation of the

property of The Columbus Gas and Fuel Company and also of The Ohio Fuel Gas Company and also of The United Fuel Gas Company, and in its determination of the respective operating charges of said Companies, and in its findings and decisions on the matters at issue, the erroneous and unsupported data, opinions and conclusions of one or more of its subordinate engineers, which opinions and conclusions were both contrary to law and unsupported by the evidence, without affording to the City of Columbus any opportunity to cross-examine the said engineers, to which the law and a fair hearing entitled the said City of Columbus, all of which would have been fully revealed by cross-examination.

X. The Commission erred in fixing the cost of distribution of natural gas within the City of Columbus at 16.03¢, instead of 14.96¢ per M. C. F.

XI. The Commission erred in fixing the price of natural gas which The Ohio Fuel Gas Company may charge The Columbus Gas and Fuel Company at 39.02¢, instead of at not more than 26.27¢ per M. C. F.

XII. The Commission erred in fixing the price of natural gas which The United Fuel Gas Company may charge The Ohio Fuel Gas Company at 22¢, instead of at not more than 18¢ per M. C. F.

XIII. The Commission erred in fixing the rate for natural gas, which may be charged at the consumer's meter in the City of Columbus, at 55¢, instead of fixing it at not more than 40.85¢, and especially at not more than the ordinance rate of 48¢ per M. C. F.

[fol. 54] XIV. The Commission erred in finding, holding and ordering that the rates and charges fixed in said order are just and reasonable for the furnishing of natural gas service by The Columbus Gas and Fuel Company for public and private consumption in the City of Columbus, Ohio, whereas the same are altogether unjust and unreasonable.

XV. The Commission erred in finding, holding and/or ordering that the rates and charges fixed by the Ordinance of the City of Columbus are unjust and/or unreasonable.

XVI. The Commission erred in substituting for the rates and charges fixed by said Ordinance the rates and charges fixed, found and determined by the Commission.

XVII. The Commission erred in fixing the percentages of depreciation of mains and services of The Columbus Gas and Fuel Company at 16.90 per cent and 22.7 per cent respectively, whereas it should have fixed them at not less than 28 per cent and 35 per cent respectively.

XVIII. The Commission erred in fixing the per cent of depreciation of transmission lines of The Ohio Fuel Gas Company at 17.5 per cent, whereas it should have fixed it at not less than 50 per cent.

XIX. The Commission erred in fixing the respective rates of return for The Columbus Gas and Fuel Company, The Ohio Fuel Gas Company and The United Fuel Gas Company at 6½ per cent, instead of not more than 6 per cent.

XX. The Commission erred in the amount allowed The Ohio Fuel Gas Company for working capital, material and supplies in that it fixed the sum at $2,690,132.00, whereas the amount allowed should not have excedeed the sum of $1,500,000.00.

XXI. The Commission erred in the adoption of unit prices for pipe in the property of The Ohio Fuel Gas Company, which caused an illegal increase of $1,546,518.00 in the valuation of said Company.

XXII. The Commission erred in fixing the value of leaseholds of The Ohio Fuel Gas Company in that it allowed $25.00 per acre and a total sum of $7,284,900.00, whereas it should have allowed not in excess of $6.00 per acre and a total of $1,569,480.00.

XXIII. The Commission erred in allocating the properties of The United Fuel Gas Company to determine a proper rate to The Ohio Fuel Gas Company by assigning 36.22 per cent of the value of said United Fuel Gas Company's properties employed in the unregulated business.

XXIV. The Commission erred in fixing the value of leaseholds of The United Fuel Gas Company at the allocated sum of $2,462,023.00, and by including therein a value for all unoperated acreage, since said unoperated acreage should have been totally excluded and the allocated values for operated acreage alone should not have excedeed $1,193,277.00.

[fol. 55] XXV. The Commission erred in including in the cost of production of The United Fuel Gas Company the sum of $845,956.00 delay rentals on unoperated acreage, whereas the same should have been totally excluded and no allowance made therefor.

XXVI. The Commission erred in fixing the amount allowable annually to The Ohio Fuel Gas Company for amortization and depreciation in that it allowed the amount of $4,826,566.00, whereas, in consideration of the evidence and especially of the small percentage of depreciation of properties found by the Commission, it should have allowed not more than $1,765,607.00.

XXVII. The Commission erred in fixing $680,071.00 as the allocated amount allowable annually to The United Fuel Gas Company for amortization and depreciation, whereas it should have allowed for such purposes not more than the allocated sum of $328,370.00.

XXVIII. The Commission erred in fixing and adopting a system-wide gate-rate for The Ohio Fuel Gas Company applicable to Columbus and to The Columbus Gas and Fuel Company, thereby unjustly and illegally burdening Columbus consumers with the cost of delivering gas to remote places supplied by said The Ohio Fuel Gas Company and increasing the price of gas to Columbus consumers.

XXIX. The Commission erred in failing and refusing to adopt and use a demand-mileage allocation, and if it rejected that method of allocation, then in failing and refusing to adopt a sales-mileage allocation, of the transmission lines of The Ohio Fuel Gas Company used and useful in supplying natural gas in the City of Columbus and of the costs of transmission.

XXX. The Commission erred in failing and refusing to give effect to the profits arising from the gasoline extraction and business of The Preston Oil Company, which is operated jointly with, and partially at the expense of, The Ohio Fuel Gas Company.

XXXI. The Commission erred in failing and refusing to give effect to the valuable benefits received by The Preston Oil Company from drilling operations performed by The Ohio Fuel Gas Company, and also in failing and refusing to

recognize and give effect to the inequitable arrangement whereby all discovered oil wells are turned over to the Preston Oil Company for totally inadequate compensation.

XXXII. The Commission erred in failing to deduct from operating expenses of The United Fuel Gas Company one-half of the net revenue derived from gasoline extraction in the allocated amount of $205,925.00.

XXXIII. The Commission erred in failing to deduct from the operating expenses of The United Fuel Gas Company revenue derived from transportation of gas for The Pittsburgh and West Virginia Gas Company in the allocated amount of $205,722.00.

[fol. 56] XXXIV. The order of the Commission and each of the findings hereinbefore complained of are not sustained by the evidence and are in clear and direct conflict therewith and contrary to law.

XXXV. That Commission erred in ordering and decreeing

"That the rates and charges not greater than or in excess of the rates and charges for the furnishing of natural gas to the City and private consumers, and to the public buildings, grounds, streets, alleys and market places in the City of Columbus, Ohio, for public and private consumption, which the Commission herein has found to be just and reasonable, be, and remain in force and effect for a period of five years from and after the effective date of the Ordinance herein complained of and appealed from, and said The Columbus Gas and Fuel Company hereby is notified, directed and required to furnish its product to its consumers thereof, public and private, in the City of Columbus, Ohio, for said period."

XXXVI. The Commission erred in ordering and decreeing that the rate and charges found and fixed by them should be the effective rates and charges for the whole of the said five-year ordinance period ending November 12, 1934, instead of for the remainder of the said ordinance period beginning at the effective date of the Commission's order.

XXXVII. There are other errors apparent on the fact of the record prejudicial to the rights of the defendant to which it has duly excepted.

XXXVIII. The Commission erred in disregarding, overruling and holding for naught the said City's formal motion asking the Commission to vacate, set aside and hold for naught each and every part of said findings and order of October 3, 1932, and to proceed to determine and fix tentative valuations of the properties before determining or fixing the rate to be charged for natural gas in the City of Columbus, to which action of the Commission in overruling said motion the said City duly excepted.

XXXIX. The said Commission erred in disregarding, denying, overruling and holding for naught the said City's said application for rehearing, to which action of the Commission in denying and overruling said application for rehearing the said City duly excepted.

Wherefore, the City of Columbus, plaintiff in error, prays that said The Public Utilities Commission of Ohio, defendant in error, may be required forthwith to transmit to the Clerk of this Court a transcript of the journal entries, original papers or transcripts thereof, and a certified tran-
[fol. 57] script of all evidence adduced upon the hearing before said Commission in the proceedings complained of; that the same may be filed in this Court and that said finding and order of the Commission entered October 3, 1932, as supplemental and amended by later orders, may be reversed or vacated, and that this plaintiff in error may be restored to all things that it has lost by reason thereof.

The City of Columbus, Ohio, by (Signed) Henry W. Worley, Its Mayor; by John L. Davies, Its City Attorney. James W. Huffman, James M. Butler, of Counsel.

Columbus, Ohio, December 1, 1932.

Waiver

The Public Utilities Commission of Ohio hereby waives the issuance and service of summons in error and enters its appearance in the above entitled cause this December 1, 1932.

The Public Utilities Commission of Ohio, by (Signed) E. J. Hopple, Its Chairman.

[fol. 58] EXHIBIT "A" TO PETITION IN ERROR

BEFORE THE PUBLIC UTILITIES COMMISSION OF OHIO

No. 5935

In the Matter of the Complaint and Appeal of THE COLUMBUS GAS AND FUEL COMPANY from an Ordinance of the City of Columbus, Ohio, to Regulate the Price That May Be Charged for Natural Gas in the City of Columbus

This day after full hearing and argument by counsel, this proceeding came on for final consideration upon the complaint of and appeal by The Columbus Gas and Fuel Company from Ordinance No. 645-29 passed by the Council of the City of Columbus, Ohio, September 3rd, 1929, to regulate the price of natural gas in the City of Columbus for a period of five years, the testimony offered and introduced in evidence upon such hearing, and the briefs and oral argument of counsel.

The Commission, being fully advised in the premises, and having this day made and filed, in writing, its finding of facts and coming first to value the property of said appellant, used and useful for the convenience of the public in the furnishing of natural gas for public and private consumption in the city of Columbus, and after considering the inventories of said property filed herein by said appellant, and the respondent, the city of Columbus, the evidence and exhibits, and having completed an independent inventory and valuation of said property, finds and ascertains the value of the several kinds and classes of property of The Columbus Gas and Fuel Company, used and useful for the convenience of the public in the furnishing of natural gas service for public and private consumption in the City of Columbus and of said properties as a whole, as of December 31st, 1929, to be the sum of $4,029,647.00, as more fully set forth in Exhibit "C" appended to the finding of facts filed herein, which exhibit hereby is made a part of this entry by adoption, as fully as if the same were here set forth in its entirety.

To which finding of the Commission, the parties hereto, The Columbus Gas and Fuel Company and the City of Columbus, Ohio, each then excepted, here now except and their exceptions here are noted of record.

And the Commission coming now to consider the complaint of and appeal by said The Columbus Gas and Fuel Company from the aforesaid Ordinance, and having caused an appraisement to be made and having ascertained and hereinbefore determined and having fixed the value of all of the property of the said company, actually used and useful for the convenience of the public in the furnishing of natural gas service for public and private consumption in the City of Columbus, excluding therefrom the value of any franchise, the right to own, operate or enjoy the same, in excess of the amount (exclusive of any tax or annual charge) actually paid to any political subdivision of the State or County as a consideration or the grant of such franchise or right, and exclusive of any value added thereto by reason of a monopoly or merger and having given consideration to the necessity for making reservations from [fol. 59] the income for surplus, depreciation and contingencies, and having taken into consideration all other matters which were deemed proper, the Commission further finds:

That the value of all of the property of The Ohio Fuel Gas Company, exclusive of distribution plant, as of December 31st, 1929, is the sum of $74,538,280.00, as fully set forth in Exhibit "B" appended to the finding of facts filed herein, which Exhibit hereby is made a part of this order by adoption;

That the value of all of the property of The United Fuel Gas Company, exclusive of distribution plant, as of December 31st, 1929, is the sum of $37,422,112.00, as set out in Exhibit "A," which exhibit hereby is made a part of this order by adoption;

That the reasonable and just rate to be paid for natural gas by The Ohio Fuel Gas Company to producing companies at the Ohio River which such gas is to be distributed in the City of Columbus, Ohio, is the sum of 22¢ per thousand subic feet;

That the reasonable and just rate to be paid for natural gas by The Columbus Gas and Fuel Company to The Ohio Fuel Gas Company at the point of delivery at the City of Columbus, Ohio, is the sum of 39¢ per one thousand cubic feet;

That the reasonable annual charge to be made by The Columbus Gas and Fuel Company for and on account of

necessary appropriations to its depreciation reserve account will be one and one-half percent of the present value of its depreciable property;

That a reasonable annual rate of return to be allowed The Columbus Gas and Fuel Company for the furnishing of natural gas service in the City of Columbus, Ohio, will be 6½% of the aforesaid value of its property, used and useful for the furnishing of natural gas service in the City of Columbus, Ohio;

That the reasonable costs and expenses of The Columbus Gas and Fuel Company for the furnishing of its natural gas service to consumers within the City of Columbus, Ohio, based upon a consumption of 5,671,639,000 cubic feet of natural gas for the calendar year ended December 31st, 1929, were as set forth in Exhibit "C," Sheet 1, appended to the finding of facts filed herein, which Exhibit hereby is made a part of this order by adoption;

[fol. 60] That for the same fiscal period, the reasonable operating expenses of The Ohio Fuel Company and of The United Fuel Gas Company were as set forth in Exhibits "B," sheet 1, and "A," sheet 1, attached to the finding of facts filed herein, which Exhibits are hereby made parts of this order by adoption;

That the rate per thousand cubic feet of 48¢, with an additional charge of 5¢ per thousand cubic feet, if the monthly bills are not paid within a fixed time, with a minimum charge of 75¢ per month without discount, fixed and prescribed by said Ordinance, are unreasonable and unjust and ought not to be ratified and confirmed, and that just and reasonable rates and charges should be substituted therefor;

That the rate per thousand cubic feet of 55¢, with an additional charge of 5¢ per thousand cubic feet, if monthly bills are not paid within a fixed time, and a monthly minimum charge of 75¢, without discount, are just and reasonable rates and charges for the service furnished and supplied by said appellant in the City of Columbus, Ohio, and

That the gross and net revenues derived by said The Columbus Gas and Fuel Company for furnishing natural gas for public and private consumption, in the City of Columbus, at the rates and charges hereinbefore found by the Commission to be just and reasonable will be sufficient to yield said The Columbus Gas and Fuel Company a reasonable compensation for such service.

It is, therefore, ordered, That the rates and charges hereinbefore set forth which are found and determined by this Commission to be just and reasonable for the furnishing of natural gas service by The Columbus Gas and Fuel Company for public and private consumption in the City of Columbus, be, and hereby they are substituted for the rates and charges fixed by said Ordinance, which the Commission has found to be unjust and unreasonable, and the Commission having made inquiry and investigation with respect to the ability of said The Columbus Gas and Fuel Company to furnish natural gas for public and private consumption in the City of Columbus, as fixed by said Ordinance, and having found that said The Columbus Gas and Fuel Company will be able to furnish its said product in said City for said period, it is therefore further,

Ordered, That the rates and charges not greater than or in excess of the rates and charges for the furnishing of natural gas to the City and private consumers, and to the public buildings, grounds, streets, alleys and market places [fol. 61] in the City of Columbus, Ohio, for public and private consumption, which the Commission herein has found to be just and reasonable, be, and remain in force and effect for a period of five years from and after the effective date of the Ordinance herein complained of and appealed from, and said The Columbus Gas and Fuel Company hereby is notified, directed and required to furnish its product to its consumers thereof, public and private, in the City of Columbus, Ohio, for said period.

To which order of the Commission, The Columbus Gas and Fuel Company, and the City of Columbus, each then excepted, here now except, and their exceptions here are noted of record.

The Public Utilities Commission of Ohio, E. J. Hopple, Chairman. Frank W. Geiger, Commissioners.

Dated at Columbus, Ohio, this 3rd day of October, 1932.

A true copy:

Ira E. Sprankle, Superintendent of Investigation.

Commissioner John W. Bricker dissents as per opinion filed.

[fol. 62] IN SUPREME COURT OF OHIO

No. 23864

[Title omitted]

APPLICATION TO BE MADE PARTY DEFENDANT

Now comes the City of Columbus and asks the Court for an order permitting the said City to be made a party defendant herein and for leave to file briefs and also to be represented in oral argument, for the reason that the said City was a defendant in the proceedings before The Public Utilities Commission of Ohio, in which proceedings the plaintiff in error herein is now prosecuting error and for the reason that the said City is interested in the determination of the above entitled proceeding in error.

City of Columbus. John L. Davies, City Attorney. James M. Butler, James W. Huffman, of Counsel.

Service of the above motion, by copy thereof, is hereby acknowledged, and we consent that the same may be granted. This 3rd day of February, 1933.

The Columbus Gas and Fuel Company, by —— ——, Its Attorneys. The Public Utilities Commission of Ohio, by —— ——, Attorney General, and —— ——, Special Counsel.

[fol. 63] IN SUPREME COURT OF OHIO

THE COLUMBUS GAS & FUEL CO.

v.

PURLIC UTILITIES COMMISSION OF OHIO

CITY OF COLUMBUS

v.

PUBLIC UTILITIES COMMISSION OF OHIO

(Two Cases)

Public Utilities Commission—Valuation for Rate-making Purposes—Ohio Law Governs, Although Gas Produced and Delivered in Another State—Determination of Rate-base—Expenses, Valuation and Working Capital Appor-

tioned on Proportionate Sales Basis, When—Transmission System Valuation and Expenses Apportioned on Demand Mileage Basis, When—Distribution Cost Apportioned on Basis of Actual Plant Valuation and Expenses, When—Valuation of Gas Producing Leaseholds —Section 499-9, General Code—Book Value, and Not Valuation in Another Controversy, Controls—Error to Depart from Legislative Formula in Ascertaining Value, —Public Utilities Commission Without Discretion in Ascertaining Value, When—Amortization Not to Be Considered in Fixing Rate, When

1. In the valuation of a public utility by the Public Utilities Commission, the fact that certain service of the utility consists in the delivery and sale of gas produced in another state does not justify the application of the law of such other state to the facts found. Pertinent facts with reference to the value of the property of a public utility used and useful in the service of a community in this state are governed by Ohio law.

2. In determining the rate-base for a natural gas company, production expenses and valuation, general property valuation, general expenses, and working capital should be apportioned, between different localities served, on proportionate sales basis.

3. In determining the rate-base for a natural gas company, transmission system, valuation, and expenses should be apportioned, between localities served, on the demand mileage basis.

4. In determining the rate-base for a natural gas company, distribution cost should be apportioned, between localities served, on the basis of actual valuation of distributing plants and expenses incurred in the several localities.

5. In the valuation of gas producing leaseholds, under Section 499-9, General Code, the Public Utilities Commission should value the leaseholds covered by the record and not employ a valuation previously made covering only part of such leaseholds in a separate and totally different controversy. In valuing such leaseholds used

and useful, the commission may consider book value [fol. 64] (Logan Gas Co. v. Public Utilities Commission, 124 Ohio St., 248, approved and followed.)

6. The General Assembly of the state of Ohio having provided a legislative formula for the Public Utilities Commission of Ohio, in ascertaining the value of the property of a public utility for the purpose of fixing a rate-base, such formula must be followed by the Public Utilities Commission, and a departure therefrom constitutes error.

7. In ascertaining the value of the property of a public utility for the purpose of fixing a rate-base, the Public Utilities Commission of Ohio has no vestige of discretionary power.

8. The laws of Ohio make no provision for amortization, and the Public Utilities Commission of Ohio is without authority to take it into consideration in the ascertainment of values in fixing a rate.

(Nos. 23864, 23867 and 23868—Decided June 21, 1933)

Error to the Public Utilities Commission

These cases arise as proceedings in error to an order of the Public Utilities Commission, entered upon a complaint and appeal filed by the Columbus Gas & Fuel Company, protesting certain rates scheduled in an ordinance fixing the price to be charged for natural gas in the city of Columbus. This ordinance was submitted to a referendum vote at an election duly held, and approved by a majority of the qualified electors voting thereon. By its terms it provided for a rate of 48 cents per M. c. f. with a minimum monthly charge of 75 cents, and was to become effective from and after November 12, 1929.

The petition in error filed in this court by the Columbus Gas & Fuel Company in case No. 23864 reads in part as follows:

"Plaintiff in error says that it is a corporation organized under the laws of Ohio and engaged as a public utility in distributing natural gas for light, heat and power purposes to consumers in the city of Columbus, Franklin county, Ohio, and contiguous territory. That it is the owner of and

[fol. 65] operating and doing business under a certain franchise granted by the city of Columbus to its predecessor in title, its successors and assigns, by Ordinance No. 4539, passed by the city council of the city of Columbus, Ohio, February 4, 1889.

"That on November 5, 1929, the city of Columbus passed an ordinance entitled 'An Ordinance, No. 64529, to regulate the price that may be charged for natural gas in the city of Columbus during the period of five years from the twelfth day of November, 1929, and providing for the submission of this ordinance to a referendum vote at an election to be held November 5, 1929.'

"That said Ordinance No. 645-29 was submitted to a vote of the qualified electors of the city of Columbus and was approved by a majority of those voting thereon at the election held on November 5, 1929, and said ordinance by its terms became effective from and after November 12, 1929.

"That said Ordinance No. 645-29 was not accepted by plaintiff in error.

"Plaintiff in error further says that on the thirty-first day of December, 1929, it presented to and filed with the defendant in error, The Public Utilities Commission of Ohio, its complaint in writing that the rate and price so fixed to be charged for natural gas in the city of Columbus during the period of five years from said twelfth day of November, 1929, was and would be unlawful, unjust, unreasonable and insufficient to yield a reasonable compensation for the service, having due regard to the value thereof and of all the property of plaintiff in error actually used and useful for the convenience of the public in furnishing said service and to the necessity of making reservations from its income for surplus, depreciation, contingencies and such other matters as may be proper, including the purchasing of a supply of natural gas in order to furnish said service, and praying that after hearing and investigation the com- [fol. 66] mission determine the rate and price so fixed by said Ordinance No. 645-29 to be unlawful, unjust and unreasonable and insufficient to yield reasonable compensation for the service, and determine and fix the just and reasonable rate and price to be charged, demanded, exacted and collected therefor as required by law, and order the same submitted for the rate, charge and price fixed by said ordinance."

The majority of the commission entered an order setting aside the rates embodied in the ordinance and fixing the price to be charged for natural gas in the city of Columbus during the period in question at 55 cents per M. c. f.

The commission found as follows with reference to the ordinance rate and with reference to the rate fixed in its order;

"That the rate per thousand cubic feet of 48¢, with an additional charge of 5¢ per thousand cubic feet, if the monthly bills are not paid within a fixed time, with a minimum charge of 75¢ per month without discount, fixed and prescribed by said Ordinance, are unreasonable and unjust and ought not to be ratified and confirmed, and that just and reasonable rates and charges should be substituted therefor;

"That the rate per thousand cubic feet of 55¢, with an additional charge of 5¢ per thousand cubic feet, if monthly bills are not paid within a fixed time, and a monthly minimum charge of 75¢, without discount, are just and reasonable rates and charges for the service furnished and supplied by said appellant in the City of Columbus, Ohio, and

"That the gross and net revenues derived by said The Columbus Gas and Fuel Company for furnishing natural gas for public and private consumption, in the City of Columbus, at the rates and charges hereinbefore found by the Commission to be just and reasonable will be sufficient [fol. 67] to yield said The Columbus Gas and Fuel Company a reasonable compensation for such service."

One member of the commission dissented from the holding of the majority of the commission, finding the rates charged in the ordinance in question to be reasonable, just and lawful, and sufficient to yield a reasonable compensation for the service under the statute.

Further facts are stated in the opinion.

Mr. John L. Davies, city attorney, Mr. James M. Butler and Mr. James W. Huffman, for the city of Columbus.

Mr. Gilbert Bettman and Mr. John W. Bricker, attorneys general, and Mr. T. J. Herbert, for the Public Utilities Commission of Ohio.

Mr. Edward C. Turner, Mr. A. M. Calland, Mr. L. K. Langdon and Mr. Chester J. Gerkin, for The Columbus Gas & Fuel Company.

OPINION

By the COURT:

The outstanding fact which must first be stated as underlying and conditioning every element involved in this controversy is as stated in the 1931 annual report of the Columbia Gas & Electric Corporation, that all of the properties involved in this case are "thoroughly integrated and interconnected, they constitute a single operating unit."

With the exception of the qualifying shares, the Columbia Gas & Electric Corporation, which is the parent corporation of this group, holds the entire common stock of the United Fuel Gas Company. This company, a resident of West Virginia, produces gas outside of the state and sells it at the Ohio river at wholesale rates to the Ohio Fuel Gas Company. The Ohio Fuel Gas Company in turn mingles this gas bought from the United Gas Company with gas produced by the Ohio Fuel Gas Company and with other gas produced by independent producers in the state, and [fol. 68] then transmits this gas to various points both within and without the state of Ohio, selling certain gas directly to consumers, and selling certain gas to distributing companies, as in this case. With the exception of the qualifying shares, all of the common stock of the Ohio Fuel Gas Company is owned by the Columbia Gas & Electric Corporation.

The Columbus Gas & Fuel Company, one of the distributing companies supplied by the Ohio Fuel Gas Company, is likewise owned by the Columbia Gas & Electric Corporation.

Another part of the picture is that the Columbia Engineering & Management Corporation, a subsidiary of the Columbia Gas & Electric Corporation, furnishes certain engineering and management service to the United Fuel Gas Company, the Ohio Fuel Gas Company, and the Columbus Gas & Fuel Company. A direct cost charge is made by the Columbia Engineering & Management Corporation for engineering services, and two and one-half per cent of the gross earnings is charged for executive management of each subsidiary of the parent company.

In Smith v. Illinois Bell Telephone Co., 282 U. S., 133, 51 S. Ct., 65, 75 L. Ed., 255, the Supreme Court of the United States has recently held that a federal District

Court has jurisdiction to determine the profits which may reasonably accrue to a related company which sells its product to a public utility and to find the cost of any engineering or management service rendered by the parent company or any subsidiary to a public utility. This holding has been reiterated and even emphasized in Western Distributing Co. v. Public Service Commission of Kansas, 285 U. S., 119, 52 S. Ct., 283, 76 L. Ed., 655, as late as February 29, 1932. In that case, discussing a gate rate, the Supreme Court said:

"Where, however, they constitute but a single interest and involve the embarkation of the total capital in what [fol. 69] is in effect one enterprise, the elements of double profit and of the reasonableness of inter-company charges must necessarily be the subject of inquiry and scrutiny before the question as to the lawfulness of the retail rate based thereon can be satisfactorily answered. * * * It is enough to say that in view of the relations of the parties, and the power implicit therein arbitrarily to fix and maintain costs as respects the distributing company which do not represent the true value of the service rendered, the state authority is entitled to a fair showing of the reasonableness of such costs, although this may involve a presentation of evidence which would not be required in the case of parties dealing at arm's length and in the general and open market, subject to the usual safeguards of bargaining and competition."

We approach the decision of questions herein presented in the light of the principles laid down by the Supreme Court of the United States and by this Court. It is not the function of this court to fix rates. Under Ohio law, the city of Columbus has power to fix rates by ordinance, and did so fix the rate involved herein. The specific question is whether the rates so fixed are unreasonable, unlawful, and confiscatory. Upon that question the utilities have the burden of proof.

As stated by Mr. Chief Justice Hughes in the case of Los Angeles Gas & Electric Corp. v. Railroad Commission of California, 289 U. S., 287, 53 S. Ct., 637, 77 L. Ed., 820, decided May 8, 1933:

"That question is whether the rates as fixed are confiscatory. And upon that question the complainant has the

burden of proof and the Court may not interfere with the exercise of the State's authority unless confiscation is clearly established.".

The specific question confronting us is the question whether the ordinance, enacted by the council of the city of Columbus and approved by a majority of the electors voting therein in referendum, establishes a rate which is [fol. 70] unreasonable, unlawful and confiscatory. Section 614-46, General Code; Hocking Valley Ry. Co. v. Public Utilities Commission, 92 Ohio St., 362, 110 N. E. 952.

We start with the proposition that we deal here with properties admitted by the utilities to be thoroughly integrated and interconnected, constituting a single operating unit. In addition, the highest court of the country has held that the commission and this court have jurisdiction to inquire into the reasonableness of the profits secured by parent companies, or by related companies, or by engineering and management companies, in a situation such as this.

Conceding the fact that, as this product is private property, the utilities are entitled to a profit in the distribution of the product, the fact also remains that under the holdings of the United States Supreme Court, the utilities are under an obligation to render fair and equal service at a rate which will produce a just and fair return for the sale of the product.

The River Rate

The majority of the commission found that a reasonable and lawful rate per M c. f. was 22.04 cents. The minority finding was 17.79 cents on the same rate. The valuations and the expense and return on investment, found for the purpose of fixing this particular part of the rate by both the majority and the minority of the commission, were the same, with the exception of two items, both under the same general heading of expenses and return on investment. The majority of the commission found that the production expenses to be $1,678,480, and the portion allocable to the Ohio Fuel Gas Company on M c. f. sales basis to be $608,053. The minority of the commission found production expenses to be $832,524, and the portion allocable to the Ohio Fuel Gas Company on M c. f. sales basis, $301,594. The majority of the commission then allowed for deprecia-

[fol. 71] tion and amortization $1,877,282, and the portion allocable to the Ohio Fuel Gas Company to be $680,071, and the minority made an allowance for the same item of $906,437, the portion allocable to the Ohio Fuel Gas Company for this item being $328,370. These two substantial differences resulted in the difference above set forth in the rate to be paid at the river for the gas delivered by the United Fuel Gas Company into the mains of the Ohio Fuel Gas Company, and thence to the Columbus Gas & Fuel Company for consumption in this city.

The difference between the majority and the minority of the commission with reference to the item of production expenses lay in the difference of their treatment of delayed rentals. The majority of the commission was of the view that as these were the figures presented before the West Virginia Commission in a gas rate case involving the property of the United Fuel Gas Company located in West Virginia, which testimony was offered entire in this hearing as evidence bearing upon the valuation of this property, the commission was compelled to make the same allowance for delayed rentals entering into production expenses as the West Virginia commission.

The minority of the commission found the same valuation of the physical property, but considerably diminished the allowance for delayed rentals upon the ground that under Ohio law there can be no allowance for delayed rentals in the case of nonproducing acreage.

With this conclusion of the minority of the commission we are in accord.

It was held by this court in the case of Logan Gas Co. v. Public Utilities Commission, 121 Ohio St., 507, 169 N. E., 575, that under the Ohio statutes, Sections 499-8, 499-9, 614-20, 614-23, etc., General Code, which order the valuation of a public utility upon the basis only of property used and useful for the public service, there can be no al- [fol. 72] lowance in valuation for nonproducing acreage. When the question is the rate which is to be paid in Ohio for gas delivered in Ohio, even if it comes from West Virginia, Ohio law must govern the valuation and rate based thereon.

With reference to the item of depreciation and amortization, the West Virginia commission allowed 1.12 per cent for depreciation and 4.15 per cent for amortization. These

figures were carried over into their findings by the majority commission. We hold elsewhere in this opinion that amortization cannot be allowed under Ohio law. The Ohio statute provides for an allowance for depreciation but not for amortization. Section 499-9, General Code. The commission has no discretion in adding items of valuation not specified by the Legislature.

We therefore find that the river rate of 17.79 cents for gas delivered from West Virginia, fixed by the minority of the commission, is not unreasonable, unlawful, nor confiscatory.

The Gate Rate

The next question which we approach is the reasonable rate which is due to the Ohio Fuel Gas Company for the gas which it supplies to the Columbus Gas & Fuel Company. The two most important questions to be decided in this particular are what shall be the proper allocation of the Ohio Fuel Gas Company's property used and useful in furnishing gas to the city of Columbus, and what is the value of its gas-producing leaseholds.

Allocation

The city contends that production property of the Ohio Fuel Gas Company should be allocated upon the basis of sales, but that the transmission property should be allocated to the particular market in this locality upon the basis of mileage multiplied by the peak demands of the particular municipality. The company contends, however, [fol. 73] that there should be no particular allocation either of the production or transmission property, to any one market except upon the basis of sales or consumption of gas. The city contends that this theory of allocation results in a statewide gate rate, that is, the same gate rate for each community in the state served directly or indirectly by the Ohio Fuel Gas Company, and that the city of Columbus is entitled to such a gate rate as is required by its demands and load factor and its distance from the source of supply. Both the majority and the minority holding of the Public Utilities Commission were in favor of the company upon this point.

The demand-mileage allocation method is not untried. It has been used in West Virginia. In re United Fuel Gas Co., P. U. R., 1918C, 193; In re West Virginia Central Gas

Co., P. U. R., 1918C, 453; In re United Fuel Gas Co., P. U. R., 1920C, 583; In re Hope Natural Gas Co., P. U. R., 1921E, 418.

This method was used in United Fuel Gas Co. v. Railroad Commission of Kentucky (D. C.), 13 F. (2d), 510, a case affirmed by the Supreme Court of the United States in 278 U. S., 300, 49 S. Ct., 150, 73 L. Ed., 390, upon another point.

In the case in 13 F. (2d), Judge Hickenlooper said at page 522: "It therefore now becomes necessary that the determined rate base and the operating expenses be apportioned to the localities with which we are particularly concerned. We are of the opinion that production expenses and valuation, general property valuation, general expenses, and working capital should be apportioned on the proportionate sales basis, transmission, system valuation, and expenses upon the demand mileage basis, and distribution upon actual valuation of the distribution plants in the several municipalities and actual expenses there incurred."

The court is impressed with the fact that in this state the unit established by the Constitution for dealing with [fol. 74] public utility service is the municipality. Article XVIII, Sections 4 and 5. This circumstance was held to have great weight in Indiana, where the demand of various utilities that a common gate rate be fixed was denied upon the ground that in Indiana the city, and not the system, is the unit. Wabash Valley Electric Co. v. Singleton (D. C.), 1 F. Supp. 106; Indiana General Service Co. v. McCardle (D. C.), 1 F. Supp. 113. The Wabash Valley Electric Co. case was reviewed by the Supreme Court of the United States, Wabash Valley Electric Co. v. Young, 287 U. S. 488, 53 S. Ct. 234, 77 L. Ed. 348, and the opinion of the court was delivered upon January 9, 1933. The question of allocation was considered in the case, Mr. Justice Sutherland delivering the opinion of the court. We quote a pertinent part of the decision upon the question of allocation, as follows:

"The court below held that under the provisions of the state statute and in the light of the facts, not the entire property and system of appellant, but the City of Martinsville alone should be treated as the unit for the purpose of determining the schedule of rates to be charged therein. The commission, as well as the master, had reached the same conclusion. . . .

"Appellant's chief contention is that its entire operating property should be taken as a unit in fixing the rate base, and that the action of the court in failing to do so deprived it of its property without due process of law."

The court cites a decision of the Supreme Court of Wisconsin, City of Eau Claire v. Wisconsin-Minnesota Light & Power Co., 178 Wis. 207, 220, 189 N. W. 476, which determined that the Wisconsin commission was required to treat the municipality as a unit and to base its rate upon the cost to the utility of serving the individual municipality rather than the average cost of serving many distinct and scattered municipalities. Mr. Justice Sutherland, summarizing the decision of the Wisconsin court, points out [fol. 75] that the Legislature must have regarded the municipality as the entity on the one hand and the utility as the entity on the other, for the purpose of establishing just and reasonable rates and service, and then states: "Since the Indiana act was patterned after the Wisconsin act with a like history and attended by similar circumstances, the court below felt warranted in following the decision of the Wisconsin court; and with that view we see no reason to disagree."

Every argument that can be made in Indiana and Wisconsin with reference to the legislative policy of regarding the municipality as the entity to deal with the utility for the purpose of establishing just and reasonable rates and service may be and is reiterated here under the far-reaching Home Rule provisions of the Ohio Constitution.

Just why the city of Columbus should be charged for the pipe lines extending to Indiana, to Toledo, and to Cincinnati, we cannot understand. By the preponderance of the evidence, the transmission lines north and northeast of Columbus do not contribute to the Columbus gas supply, and the gas rate in Columbus should not share any part of the cost, maintenance or depreciation of these lines. The test is what portion of the wells, the compressor stations, and the pipe lines is devoted to each city or community, and the method of allocation adopted by the majority and the minority of the commission was erroneous. If the proper method of allocation had been adopted, the gate rate found would have been materially decreased.

We hold that the unit of allocation in this case is not the system, but the locality, and quoting Judge Hickenlooper, supra, that "production expenses and valuation, general property valuation, general expenses, and working capital should be apportioned on the proportionate sales basis, transmission, system valuation, and expenses upon [fol. 76] the demand mileage basis, and distribution upon actual valuation of the distribution plants in the several municipalities and actual expenses there incurred."

Leaseholds

The next question which arises is as to the fair valuation of the leaseholds owned by the Ohio Fuel Gas Company and used in the conduct of its business. This court has held in a previous valuation case that the method of using cost to determine value of leaseholds did not give due regard to the value of the property used and useful. No valuation can be based upon market price because of the fact that there is no market for a gas property so extensive as that of the Ohio Fuel Gas Company.

In the case of Logan Gas Co. v. Public Utilities Commission, 121 Ohio St., 507, 169 N. E., 575, classes 2, 3 and 4 leaseholds (non-producing) were excluded from the valuation upon the ground that the property was not used and useful, and that decision was sustained by this court. In the case of Logan Gas Co. v. Public Utilities Commission, 124 Ohio St., 248, 177 N. E. 587, this court in a per curiam opinion sustained the commission in basing its valuation of class No. 1 leaseholds (producing) under Section 499-9, General Code, upon book value and not upon market value. Because the valuation found in the Logan Gas Company case was $25 per acre, both the majority and the minority of the commission in this case fixed a valuation upon class No. 1 leaseholds (producing) of $25 per acre, it being conceded in each finding that this valuation is approximately $2,500,000 more than the present book value of all leaseholds of the Ohio Fuel Gas Company and the Logan Gas Company combined, eliminating, as stated in the minority opinion, the "arbitrary write up" of approximately $3,700,000 in the Logan Gas Company's leaseholds made during 1919. In valuing these leases at more than the book value under [fol. 77] this record, the commission was in error. The commission was also in error in including in its valuation

the book value of all leaseholds. Only the present book value of class No. 1 leaseholds (producing) may be allowed.

It was held in United Fuel Gas Co. v. Railroad Commission of Kentucky, supra, that for rate base purposes, gas acreage belonging to a natural gas company should be valued at its book value rather than on the basis of its earning capacity. The court adverts to the fallacy of the argument that because of the earning capacity and large return allowed, the property has greatly increased in value, and that such increased value should thereupon be taken as the basis of another calculation of a still larger return. The holding of that case was affirmed by the United States Supreme Court in the case of United Fuel Gas Co. v. Railroad Commission of Kentucky, 278 U. S., 300, 49 S. Ct., 150, 73 L. Ed., 390.

This same fallacy has been pointed out by Mr. Justice Hughes in the Minnesota Rate Cases, 230 U. S., 352, 33 S. Ct., 729, 57 L. Ed., 1511, 48 L. R. A. (N. S.), 1151, Ann. Cas., 1916A, 18, and by Mr. Justice Brandeis in his concurring opinion in State of Missouri, ex rel. Southwestern Bell Telephone Co., v. Public Service Commission of Missouri, 262 U. S., 276, 43 S. Ct., 544, 67 L. Ed., 981, 31 A. L. R., 807.

The court in United Fuel Gas Co. v. Railroad Commission of Kentucky, supra, felt itself constrained, in the absence of market value, and under the rule just stated that earning capacity should not be taken into consideration for establishment of the rate basis, to hold that the best, if not the only evidence of value in the record was the book value.

In view of this holding of the United States District Court, and the specific holding of this court in Logan Gas Co. v. Public Utilities Commission, 124 Ohio St., 248, 177 N. E., 587, we hold that the value of class No. 1 leases should [fol. 78] be reduced to book value, and reduced to the book value of class No. 1 leases alone.

Going Concern

The members of the commission were unanimous in the disallowance of going concern value as a separate item. In a number of cases this court has affirmed such action by the commission. City of Cincinnati v. Public Utilities Commission, 113 Ohio St., 259, 148 N. E., 817; Hardin-Wyandot Lighting Co. v. Public Utilities Commission, 118 Ohio St., 592, 162 N. E., 262; Logan Gas Co. v. Public Utilities Com-

mission, 121 Ohio St., 507, 169 N. E., 575. Similarly the Supreme Court of the United States in a recent case, Los Angeles Gas & Electric Corporation v. Railroad Commission of California, supra, refused a going value claim of approximately nine million dollars.

This court is of the opinion that in the instant case this refusal was proper.

Taxes and Overheads

Upon the allowances made for taxes and general and direct overheads, we have given careful consideration to the opinion of both the majority and the minority of the Public Utilities Commission and have reached the conclusion, upon the entire record, that while there is no great difference between the majority and minority findings as to values and percentages taken, the figures presented and estimates made by the minority report are fair and just.

We are not unmindful of the economic conditions which now exist and which have existed since the beginning of this rate case and prior thereto. It is our conclusion that the record requires that the findings of the minority report upon the question of taxation and general and direct overhead be found to be reasonable and lawful.

Attention may be called to the case of Los Angeles Gas & [fol. 79] Electric Corp. v. Railroad Commission of California, 289 U. S., 287, 53 S. Ct., 637, 77 L. Ed., 820, decided by the Supreme Court of the United States on May 8, 1933. The opinion in that case, relative to the value of gas plant properties, states: "The estimates of present value, taken as the cost of reproduction as of December 31, 1929, based upon average prices from 1926 or 1927 to 1929, furnished no dependable criterion of values in the succeeding years. The country was facing a most serious decline in prices. It was entering upon a period of such depression as to constitute 'a new experience to the present generation.'"

Much that is said in the opinion is relevant in this case: "The actual cost of the property—the investment the owners have made—is a relevant fact. Smyth v. Ames, 169 U. S., 466, 547 [18 S. Ct., 418, 42 L. Ed., 819]. But, while cost must be considered, the Court has held that it is not an exclusive or final test. The public have not underwritten the investment. The property, on any admissible standard of present value, may be worth more or less than it actually cost. The

time and circumstances of the outlay, and the effect of altered conditions demand consideration. Even when cost is revised so as to reflect what may be deemed to have been invested prudently and in good faith, the investment may embrace property no longer used and useful for the public. This is strikingly illustrated in the present case, where the Company has a large gas manufacturing plant which, in view of the supply of natural gas, has not been used for several years and is not likely to be used for many years to come, if at all. But no one would question that the reasonable cost of an efficient public utility system 'is good evidence of its value at the time of construction.' We have said that 'such actual cost will continue fairly well to measure the amount to be attributed to the physical elements of the property so long as there is no change in the level of ap- [fol. 80] plicable prices.' McCardle v. Indianapolis Water Co., 272 U. S., 400, 411 [47 S. Ct., 144, 148, 71 L. Ed., 316]. And when such a change in the price level has occurred, actual experience in the construction and development of the property, especially experience in a recent period, may be an important check upon extravagant estimates."

Depreciation and Amortization

Depreciation is the reduction of worth. Amortization is the extinguishment of an existing debt or claim by means of a fund created for that purpose.

Sections 499-8, 499-9 and 614-46, General Code, deal particularly with the legislative processes that the Public Utilities Commission must use in evaluating the properties of public utilities. Section 499-8, General Code, provides that when the commission deems it necessary it may "investigate and ascertain the value of the property of any public utility used and useful for the service and convenience of the public."

Section 499-9, General Code, provides how the valuation shall be made. This section provides that the report of the commission on value shall show certain facts as specified in paragraphs A to H, inclusive. Paragraph E deals with "depreciation," as follows: "Depreciation, if any, from the new reproductive cost as of a date certain, for existing mechanical deterioration, for age, for obsolescence, for lack of

utility *or for any other cause,* the percentage and amount of each class of depreciation, if any, to be specifically set forth in detail."

Paragraph D deals with new production, as follows: "The cost of new production as of a date certain, of all physical property other than land, owned and used by such public utility or railroad, showing the values of the separate items comprising such property, together with the unit basis of such valuation."

Paragraph F provides that: "The net value as of a date certain, of all physical property other than land owned by [fol. 81] such utility or railroad, to be derived by deducting the sum of the amounts of depreciation from the sum of the new reproductive costs."

We are not losing sight of the theory of "accrued and future depreciation," and we are not hostile to the doctrine that accrued depreciation should not be deducted from the sum of the new reproductive costs.

In considering the items of depreciation and amortization we are keeping in mind Section 614-46, General Code, which provides that the rate fixed by the Public Utilities Commission shall be "fair and reasonable."

Section 614-49, General Code, provides for the carrying of a depreciation account by public utilities.

Section 614-50, General Code, provides that money set aside for depreciation purposes must be expended for such purposes and no other, except upon the approval of the Public Utilities Commission.

There is no provision for amortization under the laws of Ohio. Where the life of a utility's product is uncertain, can it be intelligently and fairly amortized? We think not.

The contention that there should be an allowance by way of amortization sufficient to return the entire investment of the company to the stockholders during the period of the life of the business is untenable, as the business has no fixed life.

As bearing on the question of the certainty of the life of the business, the gas company places much stress on the testimony of practical gas men, to the effect that they could not predict a longer life than twenty-five years for the company. Practical experience teaches us that this is a mere prophecy. The gas business will continue so long as natural gas can be taken from the earth in the fields con-

trolled by the parent corporation, in paying quantities. History along this line reveals the fact that the testimony of experts as to the probable life of natural gas is un-
[fol. 82] reliable, and it is for this reason that amortization is guesswork. An allowance for amortization such as contended for by the company would place an unwarranted burden upon the present consumers of gas. The stockholders of the gas company at no time had any right to anticipate that the law would, in addition to dividends, at some time hand them back their original investment. The nature of the natural gas business has been precarious at all times; but so long as it has continued to function, its returns have been reasonably liberal.

Capital does not feel its way to an enterprise in this day and age. Investors investigate the vices and virtues of a proposition before investing. Public utilities, and natural gas companies in particular, advance the theory that they are public servants, furnishing the public with a perishable commodity; that their product is short-lived; that when their product dies they are left with an expensive property that cannot be utilized for other purposes; and that it is only fair, during the life of the company, that its investment should be returned to it by way of amortization.

That the product natural gas will eventually die is self-evident. When it will die is an assumption. An assumption is no stronger than the facts that support it, and it is just and fair to assume that much of the equipment now used in the transportation and distribution of natural gas will be utilized for the transportation and distribution of artificial gas in the future.

We must accredit to the men who organize and manage public utility corporations in which millions are invested, a higher degree of intelligence and a keener foresight than that of the ordinary individual. Hence to say, or even to think, that upon the failure of natural gas the entire property of a natural gas company would be scrapped would be a puny tribute to those responsible for its conduct.

The evaluation of the property of a public utility is gov-
[fol. 83] erned solely by the statutes of Ohio. The Public Utility Commission of Ohio is the agency employed by the state in making valuations and fixing thereon rates of return. In the exercise of this power, does it have a discretion?

Depreciation is an incident to valuation. In considering the item of depreciation the court takes judicial cognizance of the fact that the trend of material and labor cost is downward. The case of Bluefield Water Works & Improvement Co. v. Public Service Commission of West Virginia, 262 U. S., 679, 43 S. Ct., 675, 67 L. Ed., 1176, is followed and approved in the case of Los Angeles Gas & Electric Corporation v. Railroad Commission of California, supra. In the opinion, Chief Justice Hughes quotes the Bluefield Water Works case, as follows: "A 'public utility is entitled to such rates as will permit it to earn a return on the value of the property which it employs for the convenience of the public equal to that generally being made at the same time and in the same general part of the country on investments in other business undertakings which are attended by corresponding risks and uncertainties; but it has no constitutional right to profits such as are realized or anticipated in highly profitable enterprises or speculative ventures.' "

It will be remembered that the Supreme Court of the United States in this case was considering but one question, "Was the rate fixed by the Railroad Commission confiscatory?" It disclaims all supervisory power. This court has none other than a supervisory jurisdiction in cases of this character, as provided by Article IV, Section 2, of the Constitution of Ohio, and conferred by Sections 544 et seq., General Code.

Counsel for the gas company, in their brief in case No. 23868, quote from the case of Board of Public Utility Commissioners v. New York Telephone Co., 271 U. S., 23, 46 S. Ct., 363, 70 L. Ed., 808: "Customers pay for service, not for the property used to render it. Their payments are [fol. 84] not contributions to depreciation or other operating expenses, or to capital of the company. By paying bills for service they do not acquire any interest, legal or equitable, in the property used for their convenience or in the funds of the company. Property paid for out of moneys received for service belongs to the company, just as does that purchased out of proceeds of its bonds and stocks."

We have no quarrel with this law, but we find in it no argument in favor of amortization. If amortization is to be allowed this company, it should be based on the probable

life of the business and not on the probable life of its producing wells. The commission did allow $4,158,954 for amortization annually, based upon a life expectancy of three years and two months for producing wells. It is conceded that the life of the company will be at least twenty-five years. Hence, if amortization was allowable under the laws of Ohio, it should be spread over the twenty-five years. Unless amortization can be converted into some sort of depreciation there is no authority in law for such a charge in this state.

It may be insisted that unless a reasonable amount is allowed annually for amortization a fair rate basis cannot be attained. That may be true, but the Legislature has prescribed a valuation formula. If this formula is unfair to the utility, unless and until it reaches the point of confiscation, the remedy is with the Legislature and not with the courts.

We find that the majority report of the Public Utilities Commission treats "depreciation" and "amortization" as one item. It states under the subhead of "Depreciation and Amortization": "The proper treatment of this charge against the income of the company presents a most difficult question, which cannot be determined with mathematical precision but must finally rest upon sound judgment, guided by such information as may be gleaned from the record. [fol. 85] Depreciation proper concerns the life of the plant as affected by agencies which, operating usually through a period of years, will ultimately reach a point requiring the replacement of the plant or certain parts thereof."

The substantial provisions of Section 499-9, General Code, are as follows: "Depreciation, if any, from the new reproductive cost as of a date certain, for existing mechanical deterioration, for age, for obsolescence, for lack of utility *or for any other cause.*"

And Section 614-49, as follows: "The charge for depreciation shall be such as will provide the amount required over and above the cost and expense of maintenance to keep the property of the public utility in a state of efficiency corresponding to the progress of the art or industry."

And Section 614-46, General Code, the section, as stated by the Public Utilities Commission, under which this case is being tried, provides that a fair price shall be fixed, with

due regard "to the necessity of making reservations from the income for surplus, depreciation and contingencies."

Thereupon follows a fair and reasonably liberal statement as to the application of the law of depreciation. Then the subject of amortization is treated separately.

It would seem from the treatment of this subject that the Public Utilities Commission felt, from the statutes quoted, that it had been vested with some degree of discretionary power to make an allowance for amortization, as it in so many words admits there is no statutory authority covering the item of amortization. The word "depletion" is used and an attempt is made to justify amortization as a species of depreciation.

Notwithstanding the commission treats amortization and depreciation conjointly and separately, the gas company claims that in addition to all allowances made the commis-[fol. 86] sion should have allowed amortization sufficient to return the entire investment of the company to the stockholders during the period of the life of the business.

The Public Utilities Commission, as we take it, has no vestige of discretion in evaluating the property of a public utility. Section 499-9, General Code, does contain language that would seem to delegate a discretionary power to the commission, as follows: "Depreciation, if any, * * * for existing mechanical deterioration, for age, for obsolescence, for lack of utility *or for any other cause.*" Paragraph E.

The words "or for any other cause" at first blush open a wide vista, but when we apply the limitation "existing mechanical deterioration" it gives a far different meaning. Each of these words is limited by the other in inverse order. The subject being dealt with is "deterioration." What kind of deterioration? Mechanical deterioration. When? Now, existing mechanical deterioration.

Section 614-49, General Code, is to the effect that the commission shall not be parsimonious in making its allowance for depreciation, but that it shall allow enough "over and above the cost and expense of maintenance to keep the property of the public utility in a state of efficiency corresponding to the progress of the art or industry." This section delegates no discretionary power.

Section 614-46 provides that in fixing a rate, price, charge, toll or rental, due regard shall be had to the neces-

sity of making reservations from the income for surplus, depreciation and contingencies. This section simply furnishes some side lights by which the commission must be guided in dealing with public utilities. It employs no language suggestive of a delegation of discretionary power, hence we must hold that the Public Utilities Commission of Ohio has no discretionary power in "ascertaining the value [fol. 87] of the various kinds and classes of property of each public utility," but it must keep within the bounds prescribed by Section 499-9, General Code, as liberalized by Sections 614-46 and 614-49, General Code.

The Public Utilities Commission further states:

"The Ohio Fuel Company under its set-up claims an annual depreciation allowance of $1,420,241.00 and for amortization an annual allowance of $5,449,221.00, a total annual charge of $6,869,462.00. The question of depreciation as presented by each side to this controversy will be found in company's brief, page 69, et seq., and in City's brief, page 342, et seq. As against the claims of each party the concurring commissioners, with the assistance of the Commission's engineers, have arrived at the conclusion that 1½% of the present value of the depreciable property, being all of the physical property, with the exception of lands and rights of way, would correctly represent the average amount that should be set aside for depreciation reserve. This amount produces $667,812.00. As to amortization we have considered the evidence disclosing that the average life of an Ohio well is seven and one-half years. The depreciation estimated from present rock pressure of each well discloses that there is at this time a depreciation of 58.1126%, leaving the present value of these items of 41.8874% of the original value of the leaseholds.

"Considering the present condition of these wells the remaining life expectancy is an average of three years and two months. We have considered that accounts 211, gas well construction, and 212, gas well equipment and leaseholds, are all subject to the proper amortization for the reasons already set forth. Considering the present value of the three items in reference to the remaining life expectancy we find that the annual amortization should be $4,158,954.00. The two items of depreciation and amortization amount annually to $4,826,566.00.

[fol. 88] "These allowances should be devoted to the purposes of depreciation and amortization alone and if necessary to be invested they should be invested in compliance with the statute and must not be devoted to any other purpose or used for paying dividends. If they are so conserved and used they will afford a fund from which the company may from time to time draw funds sufficient to keep the plant in effective operation. If the funds should be appropriated to other purposes, the time might well arrive when the company may not have available, and may not be able to obtain the necessary capital to restore depleted property."

This would be good law, if it were the law. But we just cannot read amortization into the law of Ohio. The Legislature had its reasons for not making a provision for amortization in the legislative formula provided for evaluating the properties of public utilities. How can an allowance for new production and amortization be reconciled? How can you spread amortization over the uncertain life of a natural gas company? The commission undertakes to spread it over the life of producing wells. If amortization were permissible under the statute, this rule could not be indulged.

The commission holds that life expectancy of the gas company's producing wells is three years and two months, and on this basis there should be an annual amortization of $4,158,954. With this finding of the commission this court cannot agree.

As indicated in the discussion above, the application of the principles laid down would result in a valuation even less in material parts than that arrived at by the minority of the commission. It follows that the court holds that the rate established by the ordinance in question is neither unreasonable, unlawful, nor confiscatory.

These conclusions necessitate a reversal of the order of the commission both in error proceeding No. 23868, in which the city of Columbus, Ohio, prayed that the finding and [fol. 89] order of the commission be reversed or vacated, and in error proceeding No. 23864, instituted by the utility, praying that the order of the commission be vacated. In case No. 23867 the city of Columbus had filed a separate error proceeding, praying in substance that the commis-

sion might be directed and ordered first to find and file tenative valuations of the properties involved in the case and to proceed in respect thereto in accordance with the statutes governing such tentative valuations.

The objection presented in this petition in error is that the commission irregularly and unlawfully made its findings and fixed the rate without having first fixed, filed and announced tentative valuations of the properties to which any interested party might file objections or protests, in violation of Section 499-12, General Code, and other sections of the statutes applicable thereto.

Since we have reversed the order of the commission, this petition in error in case No. 23867 now presents a question which has become moot, and therefore without ruling upon the question therein presented, error proceeding No. 23867 will be dismissed.

Order received in causes Nos. 23864 and 23868.

Petition in error dismissed in cause No. 23867.

Weygandt, C. J., Day, Allen, Stephenson, and Matthias, JJ., concur.

Bevis, J., not participating.

DISSENTING OPINION

JONES, J., dissenting:

On the eve of adjournment there is not time to amplify one's views in these cases, but I wish to say that this case is more far reaching in its tendencies than any other reported case that has come to my attention. Briefly stated, I dissent from the legal principles here announced for various reasons, among which are the following:

[fol. 90] Although the commission made a partial allowance therefor, the majority decision permits no allowance for depletion or amortization of utilities in cases such as these, where the annual drain upon their gas field resources by way of gas depletion is so heavy, eventually amounting to total exhaustion. Such a decision, in my judgment, where a low rate is fixed, tends to pure confiscation of property.

The decision, by considering book values as a basis of valuation, in face of overwhelming expert testimony establishing higher values, is, in that respect, erroneous.

The disallowance for delayed rentals and of valuation for the gas reserve leases, which are designated as "Class No. 2," is, in my judgment, erroneous. "Class No. 2" is used and useful as a reasonable reserve gas property, and should have been given a reasonable valuation. The theory advanced that a tract held in reserve may be capitalized only if and when it is being actually operated is obviously unsound. It might as well be argued that a set of steam boilers, held in reserve for unforeseen contingencies but not presently operated, should not be valued until they were being put into actual use. The utility's gas territory is its chief and necessary asset; its extent being measured by the requirement of all the communities which it is called upon to serve and the reasonable cost of service should be allocated among them. This utility is required to and does provide for the needs of the public in many sections of the state. In view of the short period of life which the commission found that "Class No. 1" (the tract being actually operated) had, and especially in view of longer periods of municipal franchises which the utility may be compelled to fulfill, a reasonable valuation for gas tract No. 2 held in reserve should have been allowed; otherwise no long-term public franchise contract could be safely entered into, either by the utility or the municipality. Because of the peculiar [fol. 91] hazards of the business and of inevitable gas exhaustion resulting in so short a period as that found by the commission (being presently three years and two months), ordinary business sense would require a reasonable gas tract reserve, in addition to the tract that is being actually operated, in order to supply the public's future needs. That situation, which is now so evident, did not so clearly appear when we decided the case of Logan Gas Co. v. Public Utilities Commission, 121 Ohio St., 507, 169 N. E., 575.

[fol. 92] Reporter's Certificate to foregoing paper omitted in printing.

Supreme Court of Ohio

The Columbus Gas and Fuel Company,
Plaintiff in Error,
vs.
The Public Utilities Commission of Ohio,
Defendant in Error.
} No. 23864.

The City of Columbus,
Plaintiff in Error,
vs.
The Public Utilities Commission of Ohio,
Defendant in Error.
} No. 23868.

(Consolidated by order of this court.)

APPLICATION FOR REHEARING.

Now comes The Columbus Gas and Fuel Company and makes application for rehearing in the above entitled consolidated cause for the following reasons involving patent mistakes in the court's decision due to a misunderstanding of the case, to wit:

(1) Allocation.

The court has misunderstood, misinterpreted and misapplied the opinion and decision of the Supreme Court of the United States in the case of Wabash Valley Elec-

tric Company v. Young, 289 U. S., ...; 77 L. Ed., 348, (the Martinsville case).

The following statement by this court in its opinion is erroneous, to wit:

> "This circumstance was held to have great weight in Indiana, where the demand of various utilities **that a common gate rate be fixed was denied** upon the ground that in Indiana, the city, and not the system, is the unit." (Boldface ours.)

What the Supreme Court approved in the Martinsville case was exactly what the commission unanimously did in the case at bar.

At page 156, et seq., of our brief in Cases Nos. 23867 and 23868 we not only made an analysis of the decision in the Martinsville case, but set forth the pertinent facts which were before the three-judge court and the Indiana commission. At page 76 of our reply brief in Case No. 23864 we called attention again to this Martinsville case and referred to the pages of our brief in Cases Nos. 23867 and 23868 above referred to.

As pointed out at page 78 of our reply brief in Case No. 23864, in the Martinsville case the utility objected to the fixing of a **gate rate** price. The company wanted all of its system-wide property, as well as the property in Martinsville, valued and a **system-wide retail rate** fixed. This the commission and the court refused to do. A **gate rate** was fixed and to this was added a distribution rate obtained by a valuation of the Martinsville plant and allowance for expenses and return of the plant within Martinsville.

This is exactly what the Public Utilities Commission of Ohio did in the instant case. The court should realize its error here by a consideration of its own quotation from the Martinsville case on page 11 of its opinion herein, to wit:

> "Appellant's chief contention is that its **entire operating property** should be taken **as a unit** in fixing the rate base, and that the action of the court in failing to do so deprived it of its property without due process of law." (Boldface ours.)

If The Ohio Fuel Gas Company had been supplying natural gas to consumers in Columbus, and had insisted that all of the property of its entire system, including distribution, should be taken as a unit in fixing the rate base for Columbus and that the commission **had no right to fix a gate rate** or to consider separately the distribution property and expenses allocable to the city of Columbus, then we would have a case parallel to the claims of the Wabash Valley Electric Company which were disapproved by the Indiana commission, by the three-judge court and by the Supreme Court of the United States.

Such a situation would be analogous also to the facts in the case of **City of Eau Claire v. Wisconsin-Minnesota Light & Power Co.**, 178 Wis., also quoted by this court.

The Wisconsin court was discussing distribution or retail rates rather than gate rates.

The Public Utilities Commission of Ohio treated the city of Columbus as a unit and fixed the natural gas rate irrespective of the distribution rates in any other city.

All members of the Ohio commission recognized the **impossibility** of making a demand mileage allocation of the property of The Ohio Fuel Gas Company, even if the commission had such power. In ascertaining a fair allowance to be made to The Columbus Gas and Fuel Company for the purpose of purchasing gas to supply its customers, the commission fixed a **gate rate**, which was exactly what was done in the Martinsville case upon which the court here relies for an opposite conclusion.

At typewritten page 12 of its per curiam, the court makes the statement:

> "Just why the city of Columbus should be charged for the pipe lines extending to Indiana, to Toledo, and to Cincinnati, we cannot understand."

If the court had examined the evidence rather than the gratuitous exhibit offered by counsel for the city as a part of their oral argument, the court's mistake of referring to a pipe line extending to Cincinnati would not have been made. There is no such line belonging to The Ohio Fuel Gas Company, and there is no evidence of any line of any kind to Cincinnati.

Counsel for the city during the oral argument did offer such an exhibit for the first time, and we then and there called the court's attention to the errors apparent upon the face of that exhibit.

We are confident that if the court will examine the evidence in this case, it will fully understand the justification for considering the pipe lines extending to (not into) Indiana and to Toledo. If the evidence were examined it would be found, in the first place, that the entire

valuation of said lines makes a difference in the gate rate of less than one cent **even if no revenues at all were credited.**

The evidence shows (inter alia, Company Exhibit 44, p. 3) that by virtue of the Toledo lines a credit to operating expenses of $659,438 is made each year for one single item, being the differential charge to The Northwestern Ohio Natural Gas Company. This single credit by itself more than offsets the return on the entire valuation of the lines to Toledo and the line to Indiana.

The court continues in its per curiam on typewritten page 12:

> "By the preponderance of the evidence, the transmission lines north and northeast of Columbus do not contribute to the Columbus gas supply, and the gas rate in Columbus should not share any part of the cost, maintenance or depreciation of these lines."

Had the court examined the evidence instead of accepting the statement of counsel for the city, the court would have found that not only the preponderance of the evidence but the only evidence in the case showed that the greater part of The Ohio Fuel Gas Company's producing gas lands and producing gas wells are located "north and northeast of Columbus" and do contribute to the Columbus gas supply. **We mean to say that this is the uncontradicted evidence in this case.**

If the court had looked at City Exhibit 24, and disregarded all of the company's evidence, it would have found that 2135 out of the total of 3565 wells of The Ohio Fuel Gas Company are located "north and northeast of Columbus."

If the court had disregarded all of the company's testimony and had looked at Blundon's City Exhibit 86, pages 2 and 3, the court would have found that out of 291,396 acres of No. 1 gas lands owned and operated by The Ohio Fuel Gas Company, 162,935 acres are located "north and northeast of Columbus."

If the court had examined the inventory of The Ohio Fuel Gas Company, it would have found that 43½ per cent. of the horse power of the compressing stations of The Ohio Fuel Gas Company were located "north and northeast of Columbus;" while 56½ per cent. of the horse power were located south of Columbus, and the evidence showed that this was necessitated by the light rock pressure wells in southeastern Ohio and the large quantity of gas brought into the state from West Virginia.

As stated by the majority commission at page 36 of its opinion (based upon the undisputed evidence in the case):

> "Gas from the northern part of the state may be consumed in the southern and gas from West Virginia may be distributed to any of the numerous gateways in Ohio. So it is with gas purchased by the company."

At page 7 of his opinion, the minority commissioner stated:

> "Columbus gas may come from West Virginia, it may come from southern Ohio fields or from northern Ohio fields. It may be brought through one of several transmission systems or compressed in one station or in many. It is probable that gas will some day be brought into this system in Ohio from the west.
>
> It is impossible to trace this gas in any portion of the system and it is the pressure applied from the various sources that determines the flow of the gas rather than the source of any one transmission line."

The court opens its per curiam opinion with the statement

> "that all of the properties involved in this case are thoroughly integrated and interconnected, they constitute a single operating unit."

In the seventh branch of its syllabus the court says:

> "In ascertaining the value of the property of a public utility for the purpose of fixing a rate-base, the Public Utilities Commission of Ohio has no vestige of discretionary power."

Yet the court then proceeds to instruct the Public Utilities Commission of Ohio that it is its duty to exercise its discretion, independent of any statutory authority or direction, and pick to pieces a part only of this same system.

The court on typewritten page 10 of its per curiam says that it is impressed with the fact that the unit in

this state established by the Constitution for dealing with public utility service is the municipality.

If the Ohio Constitution requires that a specific part of the transmission system of this "single operating unit" be allocated to the city of Columbus, it must necessarily require the same of the production system.

The record in the case will show that time and again the company asked the city of Columbus what producing wells or territory they desired to have allocated to the city of Columbus. We had to know the gas lands desired before we could allocate any part of the transmission system, even if such allocation were possible.

The Public Utilities Commission, which heard the evidence on the question of allocation, unanimously found that allocation of The Ohio Fuel Gas Company's transmission system by the demand mileage method was impossible.

In the face of the unanimous finding of the commission on the impossibility of allocation and of the seventh branch of this court's syllabus, to the effect that in ascertaining the value of the property of a public utility for the purpose of fixing a rate base, the commission has no vestige of discretionary power, the commission is ordered by this court to exercise a discretion and to do what the commission says is an impossible thing.

It is respectfully urged that if the court will read the evidence in this case on the subject of allocation, the court will be just as unanimous as was the commission that allocation of The Ohio Fuel Gas Company's transmission lines on a demand mileage basis is impossible.

On behalf of the city, a young man without any experience whatsoever in such matters attempted to make an allocation, copied after an allocation made on an entirely different basis and for an entirely different purpose by another man in respect of the West Virginia properties. That this young man did not know what he was talking about was demonstrated by his own figures.

The city's own evidence shows that right in the city of Columbus his alleged demand mileage allocation produced a rate of 20.19 cents at the Cleveland avenue station, while at the Linden station, less than two miles away, his rate is 41.29 cents. Yet the gas which goes to the Cleveland avenue measuring station, where the price is less than half of the Linden station, must first pass the Linden station. In other words, the further it travels the less it costs.

There just can't be any getting away from this evidence because it is the same gas that is supplied to both stations, and from the same source and out of the same transmission lines, and from the same compressor stations.

There isn't a judge sitting upon the Supreme Court bench who, if sitting as a trial judge, would not promptly set aside a jury's verdict which reached the same conclusion on the evidence as reached by the per curiam opinion in this case.

Even though the court should not feel disposed to disturb any other finding in the case, this application should be allowed for the purpose of further consideration of this subject. It will be too bad if this court, without

reading this record, or at least without understanding the evidence, shall adopt as a principle of law in Ohio a theory which the entire commission has found to be impossible of application, unfair and discriminatory; a theory which has been discarded by the state in which it originated and in which alone it has been applied; a theory which if used as a basis of fixing rates will deprive a large portion of the gas users of the state of natural gas on a fair and uniform basis; a theory which if adopted by the gas companies as a basis of operation will wreck the transmission systems which have been painstakingly built up to provide adequate and continuous service throughout the state, and put the gas users, including those in the city of Columbus, back to the old condition of uncertain supply, inadequate service and frequent gas failures, with all the distress and even suffering which that entails.

The decision and/or judgment of this Court that the Constitution and/or statutes of Ohio and/or the common law obtaining in Ohio require the transmission property and expenses of a natural gas production and transmission company to be allocated on a demand mileage basis, while the production property and general property of the same company are to be allocated on a sales basis, renders such provisions of said Constitution and/or statutes and/or common law repugnant to the Constitution of the United States and will deprive the owners thereof of their property without due process of law and will deny to them the equal protection of the law, contrary to the provisions of Section One of Article Fourteen of the Articles in Addition to and Amendment of the Constitution of the United States.

(2) **Denial of Due Process.**

The court has denied to plaintiff in error due process of law contrary to the provisions of Section One of Article Fourteen of the Articles in Addition to and Amendment of the Constitution of the United States.

The statements of fact contained in the court's opinion indicate that the court has failed to read the record and exhibits.

The fact that the record in this case is voluminous and the reading thereof would be burdensome to the court does not alter the rights of the litigants. We asked the court if blue print individual copies of the record would be acceptable and were informed that blue print copies would be satisfactory. Had the court desired printed copies they would have been furnished. Printed records are not required under the rules. (122 Ohio St., lxiv note.)

There are many important questions in the record which apparently have been wholly ignored.

(3) **Depletion—Amortization.**

The court has totally misunderstood the allowances made by both the majority and minority of the commission for amortization, and has deleted from Section 614-46, G. C., language clearly requiring such allowance.

In the eighth branch of the syllabus the court has said:

> "The laws of Ohio make no provision for amortization, and the Public Utilities Commission of Ohio

is without authority to take it into consideration in the ascertainment of values in fixing a rate-base."

At typewritten page 23 of its opinion the court says:

"Section 614-46 provides that in fixing a rate, price, charge, toll or rental, due regard shall be had to the necessity of making reservations from the income for surplus, depreciation and contingencies,".

The court in its statement of the provisions of Section 614-46 stopped in the middle of a sentence and omitted the words "and such other matters as may be proper, according to the facts in each case," which clearly requires the exercise of judgment.

If the court's holding that this statute does not confer any vestige of discretion upon the Public Utilities Commission of Ohio is adhered to, the statute must necessarily be unconstitutional for the reason that the foregoing language "and such other matters as may be proper, according to the facts in each case," is the sole and only authorization for the Utilities Commission of Ohio to allow operating expenses of any kind except "depreciation" and "contingencies." Amortization and depletion are operating expenses and have nothing whatsoever to do with valuation.

With all due respect to the court's syllabus and discussion of the valuation statutes in connection with the subject of amortization, amortization has nothing whatever to do with valuation and the discussion of the valuation statutes in such connection is entirely beside the mark.

The court's confusion—for confusion it is—may be due to the double aspect of depreciation. Depreciation is used in the valuation statutes for the purpose of requiring a deduction—not of the accrued depreciation reserve—but of the loss of value by reason of actually existing deterioration in the physical equipment which has been valued on a cost of reproduction basis. This has nothing to do with the **expense** item of depreciation. It is for the sole purpose of ascertaining present value.

Amortization has no such double aspect. It is a function of expense only, and is clearly required to be allowed to a natural gas production and transmission company by the language of Section 614-46, G. C., which the court has wholly ignored, to wit:

> "and such other matters as may be prope , according to the facts in each case,".

Sections 614-49 and 614-50 of the General Code have nothing to do with valuation. These sections do have to do with the expense which is to be allowed to public utilities on account of depreciation only. The court does incidentally discuss and quote from Section 614-46, but even then the court is talking about valuation. The court has failed to quote or discuss that part of Section 614-46 which requires the Public Utilities Commission to allow to a utility as a matter of expense "such other matters as may be proper, according to the facts in each case,".

When the gas lands are exhausted, the production and transmission properties will be valueless save for scrap. (No such claim was made in respect of the distribution

property.) This destruction of value, which is bound to occur, is a part of the cost of doing business. It is an out of pocket expense. The minority commissioner correctly recognized this principle but made an insufficient allowance therefor. The majority of the commission failed to recognize this principle and made no allowance for amortization. The majority of the commission did make an allowance for the necessary depletion of a wasting asset and the physical property used in recovering same. This depletion allowance, loosely called "amortization", is not only justified but required by that language above quoted of Section 614-46, of which the court has failed to take note. Otherwise the producing company cannot recover the cost of producing the gas.

The court in its opinion treats the item of $4,158,954 allowed by the commission to The Ohio Fuel Gas Company for the replacement of gas wells and leaseholds as "amortization."

We therefore point out again, as we did in the presentation of this case to the court, that notwithstanding the use by the commission of the term "amortization", which the commission itself says was an inaccurate use of the term, the allowance of $4,158,954 was an allowance for depreciation which for the purpose of more particular description may be called depletion. The commission referred to the allowance in question as one "for depletion of the gas bearing lands", and said that:

> "It should be treated substantially in the same manner as depreciation defined by the statute, and

> we may designate it rather inaccurately 'amortization'."

The commission by its decision had stripped The Ohio Fuel Gas Company down to one having only sufficient gas wells and gas leases to last for a period of three years and two months. The commission recognized the fact that the company was then and would be required to continue to drill new wells on other lands to replace the wells continually going out in order to continue in business, just as the company would be required to replace a compressor station which wore out or a pipe line which was no longer usable. There was therefore an investment in a wasting asset which the consumers of gas in the next three years and two months would use up and for which they should be required to pay.

The money collected under this allowance was not amortization in any sense of the word. It was not a return to the stockholders of their investment. The commission specifically provided that this allowance should be conserved and used to provide a fund from which the company could "from time to time draw funds sufficient to keep the plant in effective operation."

The commission said:

> "If the funds should be appropriated to other purposes, the time might well arrive when the company may not have available and might not be able to obtain the necessary capital to restore depleted property."

The allowance, by whatever name it may be called, was one for **depreciation** under Section 614-46, G. C., as that term is defined in Section 649-50, G. C., to wit:

> "For the purpose of renewing, restoring, replacing or substituting depreciated property in order to keep the plant in a state of efficiency."

While the court throughout its opinion calls this allowance "amortization", the fact remains that the court has made no provision in the rate for the funds necessary to renew, restore, replace and substitute the leaseholds and gas wells of The Ohio Fuel Gas Company as they become exhausted. The company has only two alternatives: (1) Continue service of the gas from the existing wells until they are exhausted and then quit business; or (2) to provide new capital to replace the assets which the gas consumers have used up and for which they have not paid.

Neither of these alternatives is the law of Ohio, and can not be the law of Ohio under the Fourteenth Amendment to the Constitution of the United States. This court should have so held.

It must be remembered that the court has specifically determined the items which may be included in determining the rate, and that an allowance for the replacing of the gas wells is not among them.

The result is that the court has said to The Ohio Fuel Gas Company that it may collect a price out of which it can pay certain definitely fixed expenses, repair and restore its pipe lines and transmission system, and have left a definite amount as a return on the investment. The

investment in gas wells and No. 1 leaseholds will have been used up in three years and two months from December 31, 1929, and must be replaced if the company is to continue in business. Much has already been replaced.

The money for such replacement can not come out of earnings (because nowhere included as an item of expense) and must be supplied by way of new capital. Such new capital, in turn, would be immediately used up and would have to be again replaced with other new capital.

Reduced to a plain but simple illustration, the effect of the decision is that the state by an action tantamount to a statute has said to the company: You have invested your money in property used in the production and sale of gas. We declare that the price at which you sell your product shall not exceed an amount sufficient to pay part only of the out of pocket expenses of conducting the business and a return of 6½ per cent. on the value of the property for three years and two months. During the three years and two months the gas consumers will have used up $17,299,026 of your gas wells and leases (or $11,500,000—estimated—when leaseholds are adjusted to book value). We make no provision for payment to you therefor. If you desire to conduct the business for another three years and two months you must provide $17,299,026 (or $11,500,000—estimated) to replace these wasting assets and again permit the same to be used up by the public without compensation to you, and so on, as long as you continue in business. This is confiscation in the most complete form. If this be the law

then much sooner than could have been anticipated, the time has arrived when in the words of the commission:

> "The company may not have available, and may not be able to obtain the necessary capital to restore depleted property."

Certainly no intelligent individual, having been required once to donate to the public $17,299,026 (or $11,500,000—estimated) or lose his entire investment, is going to repeat the process.

It cannot be said that this plain confiscation of the company's property is compensated for in any other allowance in the case. The only leeway left by the court is in the matters of book value of No. 1 leaseholds and an allocation on the demand mileage basis. When No. 1 leaseholds are reduced to book value and the Blundon demand mileage allocation substituted for the method used by the commission, the difference in revenue is only approximately $450,000 per year or a total of approximately $1,427,000 for the three years and two months as against the $17,299,026 (or $11,500,000—estimated) involved in the disallowance of the fund for depletion.

All that has been said above in respect of depletion applies with equal force, though in different amounts, to United Fuel Gas Company due to the disallowance by the court of the amount allowed by the commission as amortization of the property of that company.

Having held that an allowance for depletion is not permitted under the laws of Ohio, it was error for the court to hold that such laws are valid and not repugnant to the Constitution of the United States.

In addition to the disallowance of depletion on leaseholds and Accounts 211—Gas Well Construction and 212—Gas Well Equipment, the court failed to make any annual allowance to The Ohio Fuel Gas Company for depreciation on undistributed construction expenditures (overheads)—Accounts 258-266 inclusive, although it approved a present value of said undistributed construction expenditures arrived at by a deduction for observed depreciation.

The holding and/or judgment of this court, that the statutes of Ohio forbid the allowance to a public utility engaged in the production of natural gas for the amortization of its production and/or transmission properties and/or an allowance for the depletion of its gas lands and the necessary expenses or losses incurred incident to the exhaustion of such gas lands for the properties covered by Accounts 211 and 212 of the Uniform Classification of Accounts for Natural Gas Utilities prescribed by the Public Utilities Commission of Ohio, must necessarily render Section 614-46 of the General Code of Ohio and/or any other statute of the state of Ohio which the court holds forbids either of the foregoing allowances unconstitutional and void for the reason that such statute or statutes so construed will deprive plaintiff in error of its property without due process of law and will deny to said plaintiff the equal protection of the law, contrary to the provisions of Section One of Article Fourteen of the Articles in Addition to and Amendment of the Constitution of the United States.

(4) **Valuation of Accounts 211 and 212.**

Notwithstanding this Court's holding that no depletion is allowable to a natural gas producing company for its Gas Well Construction (Account No. 211) and its Gas Well Equipment (Account No. 212), the Court approved the Commission's method of valuing the gas well construction and equipment by deducting the accrued depletion rather than by deducting the observed depreciation of such property.

The Commission unlawfully deducted and this Court erred in approving a deduction of approximately Ten Million Dollars in the valuation of these two accounts Nos. 211 and 212 (See Company Brief, pp. 224 et seq.)

Such procedure by the Commission and such holding by this Court are repugnant to the Constitution of the United States, for the reason that such construction of the statutes of Ohio will deprive the owners thereof of their property without due process of law and will deny to them the equal protection of the law, contrary to the provisions of Section One of Article Fourteen of the Articles in Addition to and Amendment of the Constitution of the United States.

(5) **Lease Rentals.**

The court failed to read the evidence in respect of lease rentals or, having read it, failed to understand it. No. 1 or operated acreage is not discovered as such. Gas acreage must first be prospected and acquired as gas.

acreage. After it is acquired it is drilled and thus becomes operated acreage.

The undisputed evidence shows that the operated acreage in this case is not sufficient to last during the term of the Columbus ordinance. The Ohio Fuel Gas Company can not, without reserve acreage, discharge its obligation to The Columbus Gas and Fuel Company or to the many other communities throughout Ohio which it is obligated to serve.

The provisions of Section 614-46 G. C. not only authorize but require the allowance of these rentals as a necessary operating expense.

The court offered no reason for disallowing these lease rentals from the operating expenses of The Ohio Fuel Gas Company and United Fuel Gas Company, other than the brief statement made in connection with its discussion of the river rate "that under Ohio law there can be no allowance for delayed rentals in the case of non-producing acreage". Until this decision it was not the law of Ohio that these rentals could not be allowed in fixing rates. The statutes of Ohio which govern the fixing of rates provide for the fixing of a rate which will be just and reasonable and sufficient to yield reasonable compensation for the service. It has been the view of the Public Utilities Commission since its inception, recognized by every decision of this court in which an order of the Puble Utilities Commssion fixing rates has been reviewed, that under this provision it was the duty of the commission and the court to fix a rate under which a utility, in addition to a fair return on the value of the

property devoted to public service, and in addition to the necessity of making reservations from the income for surplus, depreciation and contingencies and such other matters as might be proper, could pay its reasonable and necessary operating expenses. There is no limitation in the statutes, and the sole question before this court was whether or not lease rentals on reserve acreage was a proper operating expense. This is a question of fact and not of law. The evidence in this case was all to the effect that reserve acreage is essential to the conduct of the business of The Ohio Fuel Gas Company; that without reserve acreage such a company could never be organized and constructed; and that without reserve acreage the company can not continue. In the determination of a question of fact the court should examine the record in the particular case and not employ a conclusion previously reached in respect of another company in a separate controversy. The court condemns the use by the commission of the Logan Gas Company decision as a measure of value of the acreage covered by this record. By the same token the Logan gas case should not be relied on by the court as a determination of facts applicable to this case.

To the extent that the amount allowed as a return on the property devoted to the service must be used for the payment of necessary operating expenses, it is not a return on the investment. Having found that an allowance for this necessary operating expense is not permitted by the laws of Ohio, it was error for the court to hold that such laws are valid and not repugnant to the Constitution of the United States, for the reason that said laws so interpreted will deprive the owners thereof of their property without due process of law and will deny to them the equal protection of the law, contrary to the provisions of Section One of Article Fourteen of the Articles in addition to and amendment of the Constitution of the United States.

(6) **Leasehold Value.**

At page 13 of its typewritten opinion this court says:

> "It was held in United Fuel Gas Co. v. Railroad Commission of Kentucky, supra, that for rate base purposes, gas acreage belonging to a natural gas company should be valued at its book value rather than on the basis of its earning capacity."

While that is a correct statement, the court in that case adopted the book value **because there was no evidence of market value.**

In the case at bar there is ample evidence of market value, and no attempt was made, except by the city upon cross examination, to offer a valuation based upon "earning capacity".

At page 12 of this court's typewritten opinion the court says:

> "No valuation can be based upon the market price because of the fact that there is no market for gas property so extensive as that of The Ohio Fuel Gas Company."

Here, again, the court accepts the statement of counsel for the city instead of reading the evidence on the subject.

The uncontradicted evidence in the case shows that all of the leaseholds of the company can be sold as an entirety. This is not only the uncontradicted evidence of witnesses, but we produced and offered in evidence as Company Exhibit 140 (which the commission refused to receive but which this court should have received and

considered) a bona fide offer from a responsible concern for all these leaseholds.

The court assumes that the conduct and operations of a natural gas producing company are so well known that the court may take judicial notice thereof and disregard the only evidence on the subject in the case.

If the court had read the evidence in this case it would have seen that its decision in the Logan case had no application here.

The evidence in this case is uncontradicted that all of the leaseholds are used and useful; that The Ohio Fuel Gas Company could not be conducted without them; and that The Ohio Fuel Gas Company could not be reproduced without them.

The uncontradicted evidence also shows that the leaseholds are reasonable in amount for the purposes of The Ohio Fuel Gas Company.

The uncontradicted evidence shows that gas from leaseholds classed as No. 2 was, on the day certain, actually being drawn upon to deliver gas to consumers.

The uncontradicted evidence also shows that between the date certain and the date of hearing before the commission wells had been drilled upon and gas was being taken from Classes 2, 3 and 4 of the leaseholds.

The decision and/or judgment of this Court holding that the Statutes of Ohio do not permit a return on the valuation of all of the leaseholds, including Classes Nos. 2, 3 and 4, renders such statutes repugnant to the Constitution of the United States and will deprive the owners thereof of their property without due process of law

and will deny to them the equal protection of the law, contrary to the provisions of Section One of Article Fourteen of the Articles in Addition to and Amendment of the Constitution of the United States.

The decision and/or judgment of this court holding that

> "In valuing these leases (referring to the gas leaseholds involved in this case) at more than the book value under this record, the commission was in error."

and

> "We hold that the value of Class No. 1 leases should be reduced to book value, and reduced to the book value of Class No. 1 leases alone."

results in a statutory rate repugnant to the Constitution of the United States for the reason that it will deprive the owners of said leases of their property without due process of law and will deny to them the equal protection of the law, contrary to the provisions of Section One of Article Fourteen of the Articles in Addition to and Amendment of the Constitution of the United States.

(7) **Going Concern Value.**

The conclusion of the court in respect of going concern value is based upon an erroneous assumption of fact. The court said:

> "The members of the commission were unanimous in the disallowance of going concern value **as a separate item**".

This case was not one of failure of the commission to allow going concern value **as a separate item** because it

had been otherwise allowed, as was the situation in the case of **Hardin-Wyandot Lighting Company v. Public Utilities Commission,** 118 Ohio St., 592, and the other cases cited by this court in its opinion. In this case the commission made no allowance whatever for going concern value. The evidence conclusively showed that there was no inclusion of going concern value in any other figure or allowance in the case and the commission definitely said in its written finding

"going concern value has been disallowed".

Because of this erroneous assumption of fact by this court and the erroneous conclusion based thereon, the plants which have been valued for rate purposes are plants not advanced to the point of doing business and earning money. The plants of The Columbus Gas and Fuel Company, The Ohio Fuel Gas Company and United Fuel Gas Company are all advanced to the point of doing business and earning money, and the decision of the court ignores a value which the Supreme Court of the United States has said is self-evident, is a property right and must be considered in fixing rates.

The decision and/or judgment of this Court disallowing any going concern value in the valuation of the used and useful property or a return thereon results in a statutory rate repugnant to the Constitution of the United States which will deprive the owners thereof of their property without due process of law and will deny to them the equal protection of the law, contrary to the provisions of Section One of Article Fourteen of the Articles in Addition to and Amendment of the Constitution of the United States.

(8) **The West Virginia Property.**

In the first branch of its syllabus the court holds:

> "In the valuation of a public utility by the Public Utilities Commission, the fact that certain service of the utility consists in the delivery and sale of gas produced in another state does not justify the application of the law of such other state to the facts found. Pertinent facts with reference to the value of the property of a public utility used and useful in the service of a community in this state are governed by Ohio law."

Before such a proposition of law could be considered sound it would have to be based upon the assumption that the state of Ohio could claim the dedication of property located in West Virginia to a public use in Ohio. The mere statement of the proposition should be sufficient to cause the court to withdraw this branch of the syllabus. The evidence shows that the West Virginia property is dedicated to service in West Virginia.

In this connection the court ignored entirely a contract which a consideration of the whole evidence in this case shows to have been made in good faith and on fair terms between separate and distinct corporations, both of whose capital stock, however, was owned by the same holding company. The laws of Ohio recognize the right of a corporation to own the stock of other corporations.

The decision and/or judgment of this Court, as set forth in the first branch of its syllabus above quoted, renders the Ohio law referred to therein repugnant to the Constitution of the United States and will deprive

the owners of their property without due process of law and will deny to them the equal protection of the law, contrary to the provisions of Section One of Article Fourteen of the Articles in Addition to and Amendment of the Constitution of the United States.

The following decision and/or judgment of this court:

> "We therefore find that the river rate of 17.79 cents for gas delivered from West Virginia, fixed by the minority of the commission, is not unreasonable, unlawful nor confiscatory."

results in a statutory rate repugnant to the Constitution of the United States for the reason that it will deprive the owners of their property without due process of law and will deny to them the equal protection of the law, contrary to the provisions of Section One of Article Fourteen of the Articles in Addition to and Amendment of the Constitution of the United States.

(9) **Confiscation.**

The decision and judgment of this court results in a rate which will confiscate the property which this court holds constitutes a single operating unit and will deprive the owners thereof of said property without due process of law and deny to them the equal protection of the law, contrary to the provisions of Section One of Article Fourteen of the Articles in Addition to and Amendment of the Constitution of the United States.

The decision and/or judgment of this court approving the minority commissioner's gate rate of 31.7 cents per M c. f. results in a statutory rate repugnant to the Con-

stitution of the United States, for the reason that it will deprive the owners of their property without due process of law and will deny to them the equal protection of the law, contrary to the provisions of Section One of Article Fourteen of the Articles in Addition to and Amendment of the Constitution of the United States.

The decision and/or judgment of this court holding that the rate established by the ordinance in question is neither unreasonable, unlawful nor confiscatory results in a statutory rate repugnant to the Constitution of the United States for the reason that it will deprive plaintiff in error of its property without due process of law and deny to plaintiff in error the equal protection of the law, contrary to the provisions of Section One of Article Fourteen of the Articles in Addition to and Amendment of the Constitution of the United States.

The holding and/or judgment of this court that the rate of 55 cents per thousand cubic feet, with a 75-cent monthly minimum charge, as fixed by the Public Utilities Commission of Ohio and substituted for said ordinance rate, was not unreasonable, unlawful or confiscatory is erroneous because such statutory rate is repugnant to the Constitution of the United States for the reason that such rate will deprive plaintiff in error of its property without due process of law and deny to plaintiff in error the equal protection of the law, contrary to the provisions of Section One of Article Fourteen of the Articles in Addition to and Amendment of the Constitution of the United States.

(10) **Rate of Return—Confiscation.**

The court failed to examine the evidence and compute the actual revenues and actual expenses which by their decision could be received or paid out by The Columbus Gas and Fuel Company and The Ohio Fuel Gas Company. Had this been done the resulting confiscatory nature of the court's decision would have been apparent.

Based upon the receipts possible under the court's decision, and taking credit only for the reduced allowances for expenses under the court's decision, but making provision for the necessary expenses which must be actually paid out for lease rentals and taxes under existing rates, and with a 4 per cent. allowance for depletion and amortization on the minority commissioner's rate base, the gate rate approved by the court does not permit of a return of as much as 1 per centum per annum on the valuation of the property found by the minority commissioner.

Assuming the gate rate produced by the application of The Ohio Fuel Gas Company's revenues and expenses computed on the foregoing basis, the retail rate of 48 cents per M c. f., with a 75-cent minimum charge, produces a deficit for The Columbus Gas and Fuel Company.

The statutory rate resulting from the court's decision will deprive the plaintiff in error of its property without due process of law and deny to it the equal protection of the law, contrary to Section One of Article Fourteen of the Articles in Addition to and Amendment of the Constitution of the United States.

(11) **Impairment of Contract.**

The finding and judgment of the court in respect of what the court in its opinion denominates the "River Rate" violates Section Ten of Article One of the Constitution of the United States by impairing the obligations of the contract, Company Exhibit No. 58, made on the thirty-first day of October, 1927, by and between United Fuel Gas Company, a West Virginia corporation, and The Ohio Fuel Gas Company, an Ohio corporation.

(12) **Impairment of Contract.**

The finding and judgment of the court in respect of what the court in its opinion denominates the "Gate Rate" violates Section Ten of Article One of the Constitution of the United States by impairing the obligations of the contract, Company Exhibit No. 11, entered into as of the first day of July, 1929, between The Columbus Gas and Fuel Company and The Ohio Fuel Gas Company.

(13) In addition to the foregoing, we ask a rehearing upon each and every assignment of error contained in our petition in error as fully as if the same had been here rewritten, for the reason that the court's decision is contrary to the evidence, against the manifest weight of the evidence and contrary to the law applicable thereto.

Respectfully submitted,

EDWARD C. TURNER,
ALBERT M. CALLAND,

Attorneys for Plaintiff in Error, The Columbus Gas and Fuel Company.

Columbus, Ohio,
July 17, 1933.

[fol. 122] IN SUPREME COURT OF OHIO

No. 23864

No. 23868

[Titles omitted]

Consolidated by Order of this Court dated the 25th day of April, 1933

MOTION FOR SEVERANCE—Filed Sept. 20, 1933

To the Honorable Carl V. Weygandt, Chief Justice of the Supreme Court of Ohio:

The Columbus Gas and Fuel Company states that on the 20th day of September, 1933, it served upon The Public Utilities Commission of Ohio notice that The Columbus Gas and Fuel Company would, on the 20th day of September, 1933, present to the Honorable Carl V. Weygandt, Chief Justice of the Supreme Court of Ohio, a petition for an appeal of the above entitled consolidated cause to the Supreme Court of the United States, and calling upon said The public Utilities Commission of Ohio to join in said petition.

Said notice further advised said The Public Utilities Commission of Ohio that unless said The Public Utilities Commission of Ohio joined in said petition for appeal, The Columbus Gas and Fuel Company would proceed without such joinder.

The Public Utilities Commission of Ohio has acknowledged service of said notice in writing and stated in writing that it did not desire to join in said petition for appeal.

A true and correct copy of the notice served upon said The Public Utilities Commission of Ohio, upon which is endorsed the acknowledgment of said notice and the statement that said The Public Utilities Commission of Ohio did not desire to join in said petition for appeal, is hereto attached and made a part hereof and marked Exhibit "A."

[fol. 123] Wherefore The Columbus Gas and Fuel Company hereby moves that a severance be granted and that The Columbus Gas and Fuel Company be permitted to

proceed with its petition for appeal without the joining therein by The Public Utilities Commission of Ohio.

Respectfully, Edward C. Turner, Albert M. Calland, Attorneys for The Columbus Gas and Fuel Company.

[fol. 124] EXHIBIT "A" TO MOTION FOR SEVERANCE

IN THE SUPREME COURT OF OHIO

No. 23864

THE COLUMBUS GAS AND FUEL COMPANY, Plaintiff-in-Error,

vs.

THE PUBLIC UTILITIES COMMISSION OF OHIO, Defendant-in-Error

No. 23868

THE CITY OF COLUMBUS, OHIO, Plaintiff-in-Error,

vs.

THE PUBLIC UTILITIES COMMISSION OF OHIO, Defendant-in-Error

Consolidated by Order of the Court Dated the 25th day of April, 1933

SUMMONS AND SEVERANCE—Filed Sept. 20, 1933

To the Public Utilities Commission of Ohio:

The Columbus Gas and Fuel Company will present to Honorable Carl V. Weygandt, Chief Justice of the Supreme Court of Ohio, a petition for an appeal of the above entitled consolidated cause to the Supreme Court of the United States, and if such petition be denied by said Chief Justice of the Supreme Court of Ohio, the petition for appeal will be presented to the proper justice of the Supreme Court of the United States. The Columbus Gas and Fuel Company hereby calls upon The Public Utilities Commission of Ohio to join in said petition for appeal.

The petition for appeal will be presented to Honorable Carl V. Weygandt, Chief Justice of the Supreme Court of

Ohio on the 20th day of September, 1933. Unless The Public Utilities Commission of Ohio joins in said petition for appeal, The Columbus Gas and Fuel Company will present its petition for appeal without such joinder together with a motion for an order granting a severance and permitting an appeal by The Columbus Gas and Fuel Company.

Respectfully, Edward C. Turner, Albert M. Calland, Attorneys for The Columbus Gas and Fuel Company.

The Public Utilities Commission of Ohio on this 20th day of September, 1933, hereby acknowledges service of [fol. 125] the foregoing notice of summons and severance and states that it does not desire to join in said petition for appeal.

The Public Utilities Commission of Ohio, by E. J. Hopple, Chairman; Frank W. Geiger, Charles F. Schaber, Commissioners.

[fol. 125a] [File endorsement omitted.]

[fols. 126-127a] Summons and Severance omitted, printed side page 124, ante.

[fol. 128] IN SUPREME COURT OF OHIO

No. 23864

No. 23868

Consolidated by Order of This Court Dated the 25th Day of April, 1933

[Titles omitted]

ORDER GRANTING SEVERANCE—Filed Sept. 27, 1933

This matter came on to be heard upon the motion of The Columbus Gas and Fuel Company for a severance and permission to proceed with a petition for an appeal of the

above entitled consolidated cause to the Supreme Court of the United States without the joining therein by The Public Utilities Commission of Ohio and upon the facts as set out in said motion.

Whereupon the undersigned, Chief Justice of the Supreme Court of Ohio, being fully advised in the premises finds that said motion is well taken and the same is hereby granted. It is therefore ordered that a severance be granted and that The Columbus Gas and Fuel Company be and it is hereby permitted to proceed with its petition for an appeal of the above entitled consolidated cause to the Supreme Court of the United States without the joining in said petition by The Public Utilties Commission of Ohio.

Carl V. Weygandt, Chief Justice of the Supreme Court of Ohio.

9/27/33.

[fol. 128a] [File endorsement omitted.]

[fol. 129] IN SUPREME COURT OF OHIO

No. 23864

No. 23868

Consolidated by Order of This Court Dated the 25th Day of April, 1933

[Titles omitted]

Petition for Appeal, Assignment of Errors, and Prayer for Reversal—Filed Sept. 20, 1933

Petition for Appeal

To Hon. Carl. V. Weygandt, Chief Justice of the Supreme Court of Ohio:

Considering itself aggrieved by the decision of the Supreme Court of the State of Ohio in the above entitled consolidated cause, The Columbus Gas and Fuel Company hereby prays that an appeal may be allowed to the Supreme Court of the United States for the reasons specified in the Assignment of Errors hereinafter set out.

And your Petitioner desires that said appeal shall operate as a supersedeas and therefore prays that an order may be made fixing the amount of security which said Petitioner shall give and furnish upon such appeal, and that upon giving such security the judgment of the Supreme Court of Ohio and the execution thereof be suspended and stayed until the determination of said appeal by the Supreme Court of the United States.

[fol. 130] Assignment of Errors

And the said The Columbus Gas and Fuel Company assigns the following errors in the record and proceedings in the said case.

Said Court erred:

(1) In finding and holding that for the period of five years from and after the 12th day of November, 1929, the rate or price of 55 cents per one thousand cubic feet with an additional charge of 5 cents per one thousand cubic feet if monthly bills are not paid within a fixed time, and a monthly minimum charge of 75 cents, without discount, fixed and determined by The Public Utilities Commission of Ohio as the rate or price to be charged by The Columbus Gas and Fuel Company for natural gas for lighting and fuel purposes in the City of Columbus, Ohio, is neither unreasonable, unlawful nor confiscatory and does not deprive the plaintiff in error of its property without due process of law and does not deny to plaintiff in error the equal protection of the law contrary to the provisions of Section One of Article Fourteen of the Articles in Addition to and Amendment of the Constitution of the United States, and does not impair the obligations of contracts contrary to Section Ten of Article One of the Constitution of the United States.

(2) In finding and holding that for the period of five years from and after the 12th day of November, 1929, the rate or price of 75 cents as a minimum per month per customer, without discount, and 48 cents for each 1,000 cubic feet of natural gas, with an additional charge of 5 cents for each 1,000 cubic feet of natural gas if the monthly bills are not paid within a prescribed time, fixed and determined by Ordinance No. 645-29, enacted by the City of Columbus, Ohio, as the rate or price to be charged for natural gas for light-

ing and fuel purposes in the City of Columbus, Ohio, is neither unreasonable, unlawful nor confiscatory, and does not deprive the plaintiff in error of its property without due process of law and does not deny to plaintiff in error the equal protection of the law contrary to the provisions of Section One of Article Fourteen of the Articles in Addition to and Amendment of the Constitution of the United States, and does not impair the obligations of contracts, contrary to Section Ten of Article One of the Constitution of the United States.

[fol. 131] (3) In sustaining the validity of a statutory rate or price for natural gas which does not provide revenue sufficient to enable The Columbus Gas and Fuel Company to purchase from The Ohio Fuel Gas Company the natural gas necessary to conduct its business and to pay therefor either a reasonable price or the price fixed by contract between said companies and shown by the evidence to be reasonable and necessary to compensate said The Ohio Fuel Gas Company for said gas, and in holding that such statutory rate does not deprive the plaintiff in error of its property without due process of law, nor deny to it the equal protection of the law contrary to the provisions of Section One of Article Fourteen of the Articles in Addition to and Amendment of the Constitution of the United States.

(4) In sustaining the validity of a statutory rate or price for natural gas which does not provide a return sufficient to assure or permit confidence in the financial soundness of plaintiff in error or The Ohio Fuel Gas Company or United Fuel Gas Company, and is inadequate under efficient and economical management to maintain and support plaintiff in error's credit, and/or the credit of said other companies, and to enable plaintiff in error and/or said other companies to raise the money necessary for the proper discharge of their duties; which actually does not permit of a return of as much as one percentum on the valuation found and approved by said Court of production and transmission property and produces a deficit from the operation of distribution property; and in holding that such rate or price does not deprive the owners of their property without due process of law and does not deny to said owners the equal protection of the law contrary to the provisions of Section One of Article Fourteen of the Articles in Addition to and Amendment of the Constitution of the United States.

(5) In sustaining the validity of a statutory rate or price for natural gas and in holding that such rate or price, does not deprive the owners of their property without due process of law and does not deny to said owners the equal protection of the law contrary to the provisions of Section One of Article Fourteen of the Articles in Addition to and Amendment of the Constitution of the United States, which [fol. 132] said rate permits a return on a part only of the value of property devoted to the service and provides funds for the payment of a part only of the actual and necessary expenses of operating the business, because of the following:

(a) The disallowance of any return upon gas leaseholds classed as Numbers 2, 3 or 4, owned and used by The Ohio Fuel Gas Company as the source of supply of natural gas, and indispensable to the continuance of the business, shown by the evidence to have a value of at least $23,752,448.00.

(b) The disallowance of a return upon more than the book value of gas leaseholds classed as No. 1, owned and used by The Ohio Fuel Gas Company as the source of supply of natural gas, and which the evidence showed to have an actual value of at least $19,252,059.00.

(c) No allowance for the annual rentals actually paid by The Ohio Fuel Gas Company or gas leaseholds held and used as the source of supply of natural gas, and indispensable to the continuance of the business, amounting for the year ending December 31st, 1929, to $1,684,913.00.

(d) No allowance to The Ohio Fuel Gas Company for the amortization of production and/or transmission properties and/or for the depletion of gas lands and the necessary expenses or losses incurred incident to the exhaustion of such gas lands, including the exhaustion of the investment in gas wells (Account No. 211—Gas Well Construction), and the equipment therein (Account No. 212—Gas Well Equipment). The evidence shows that such allowances should have been made in the sum of at least $5,449,221.00 per year.

(e) Fixing the value of gas wells (Account No. 211—Gas Well Construction), and the equipment therein (Account No. 212—Gas Well Equipment), by deducting from the reproduction cost of said property the sum of $13,893,126.00

based upon the claimed percentage of depletion of the gas instead of the sum of $4,781,450.00 being the existing deterioration in the property.

(f) No allowance in the value of the property of The Ohio Fuel Gas Company for cost of organization, shown by the evidence to be $1,999,922.00.

[fol. 133] (g) No allowance in the value of the property of The Ohio Fuel Gas Company for cost of financing, shown by the evidence to be necessarily incurred in the reproduction of said property, amounting to $3,199,876.00.

(h) No allowance in the value of the property of The Ohio Fuel Gas Company for going concern value, shown by the evidence to be not less than $12,000,000.00.

(i) Insufficient allowance in the value of the property of The Ohio Fuel Gas Company for Undistributed Construction Expenditures (General Overhead), to-wit: Amount shown by the evidence, $10,468,759.00; amount allowed $7,803,083.00.

(j) Insufficient allowance in the value of the property of The Ohio Fuel Gas Company for Working Capital, to-wit: Amount shown by the evidence, $3,700,000.00; amount allowed, $1,700,000.00.

(k) No allowance in the value of the property of The Ohio Fuel Gas Company for $234,295.00 of property partially constructed but not yet placed in actual operation.

(l) The allowance to The Ohio Fuel Gas Company for annual depreciation of an amount insufficient to renew, restore, replace or substitute depreciated property in order to keep the plant in a state of efficiency to-wit: Amount shown by the evidence to be necessary $1,420,241.00; amount allowed $1,059,364.00.

(m) The allowance to The Ohio Fuel Gas Company for taxes of an amount insufficient to pay Federal Income Taxes, State Excise Taxes and State Public Utility Taxes at the rates fixed by the laws of the United States and the State of Ohio on the net income and gross receipts produced by the rates and prices fixed by the court as shown by the following table:

	Amount to be paid at existing rates	Amount allowed
Federal Income Taxes	$751,520.00	$573,692.00
Excise Taxes	407,523.00	229,300.00
Utility Taxes	8,889.00	8,706.00
Total	$1,167,932.00	$811,698.00

[fol. 134] (n) Allocating the transmission property and expenses of The Ohio Fuel Gas Company on a demand-mileage basis while the production property and general property of the same company are allocated on a sales basis.

(o) The allowance to The Ohio Fuel Gas Company of an amount for the purchase of gas necessary to conduct its business insufficient to enable The Ohio Fuel Gas Company to pay for gas purchased from United Fuel Gas Company either a reasonable price or the price fixed by contract between the said companies and shown by the evidence to be reasonable and necessary to compensate said United Fuel Gas Company for said gas.

(p) Fixing the value of property owned and used entirely in the state of West Virginia by a corporation which, so far as this case is concerned, does no business in the State of Ohio, by applying thereto the laws of Ohio instead of the laws of West Virginia.

(q) The disallowance of any return upon gas leaseholds classed as Nos. 2, 3 or 4 owned and used by United Fuel Gas Company as the source of supply of natural gas, and indispensable to the continuance of the business, shown by the evidence to have a value of approximately $14,750,000.00.

(r) The disallowance of a return upon more than the book value of gas leaseholds classed as No. 1, owned and used by United Fuel Gas Company as the source of supply of natural gas, and which the evidence showed to have an actual value of approximately $40,250,000.00.

(s) No allowance to United Fuel Gas Company for the annual rentals actually paid on gas leaseholds classed as Nos. 2, 3 or 4, held and used as the source of supply of natural gas, and indispensable to the continuance of the business, amounting to $1,536,622.00 for the year ending December 31, 1930.

(t) No allowance to United Fuel Gas Company for the amortization of production and/or transmission properties and/or for the depletion of gas lands and the necessary expenses or losses incurred incident to the exhaustion of such gas lands. The evidence shows that such an allowance should have been made in the sum of at least $2,227,323.00 per year.

[fol. 135] (u) The allowance to United Fuel Gas Company for taxes of an amount insufficient to pay Federal income taxes at the rates fixed by the laws of the United States to-wit: Amount to be paid at existing rates, $601,808.00; amount allowed $241,618.00.

(v) No allowance in the value of the property of United Fuel Gas Company for Going Concern Value, shown by the evidence to be not less than $2,832,053.00.

(w) Using theoretical labor performances in determining the cost of reproduction of the property of The Columbus Gas and Fuel Company and totally disregarding the evidence of actual labor performances on similar work in and about the City of Columbus.

(x) No allowance in the value of the property of The Columbus Gas and Fuel Company for a holder station and equipment owned and used in the distribution of natural gas, valued at $167,710.00.

(y) No allowance in the value of the property of The Columbus Gas and Fuel Company for Going Concern Value shown by the evidence to be not less than $537,340.00.

(z) No allowance in the value of the property of The Columbus Gas and Fuel Company for Cost of Financing, shown by the evidence to be necessarily incurred in the reproduction of said property, amounting to at least $211,000.00.

(aa) Insufficient allowance in the value of the property of The Columbus Gas and Fuel Company for Undistributed Construction Expenditures (General Overheads), to-wit, amount shown by the evidence $585,386.00; amount allowed $436,405.00.

(bb) Insufficient allowance in the value of the property of The Columbus Gas and Fuel Company for Working

Capital, Materials and Supplies, to-wit, amount shown by the evidence $226,000.00; amount allowed $100,000.00.

(cc) The allowance to The Columbus Gas and Fuel Company for Annual Depreciation of an amount insufficient to renew, restore, replace or substitute depreciated property in order to keep the plant in a state of efficiency, to-wit, amount shown by the evidence $174,880.24; amount allowed $68,196.00.

[fol. 136] (dd) The allowance to The Columbus Gas and Fuel Company for taxes of an amount insufficient to pay Federal Income Taxes, State Excise Taxes and State Public Utility taxes at the rates fixed by the laws of the United States and the State of Ohio on the net income and gross receipts produced by the rates and prices fixed by the Court, as shown by the following table:

	Amount to be paid at existing rates	Amount allowed
Federal Income Taxes	$41,736.00	$22,644.00
Excise Taxes	66,384.00	36,714.00
Utility Taxes	1,448.00	1,394.00
Total	$109,568.00	$60,752.00

(ee) The disallowance of any amount for annual expenses actually and necessarily incurred by The Columbus Gas and Fuel Company for the purpose of increasing sales of gas, and known as Load Building Expenses, amounting to $29,698.38 for the year ending December 31, 1929.

(ff) Using the fictitious and erroneous amount of 5,671,639,000 cubic feet as the amount of gas sales instead of the correct amount of 5,848,495,000 cubic feet in determining the cost of gas purchased.

(gg) The allowance of an insufficient amount for Lost Gas, to-wit, 5 per cent. of 5,671,639,000 cubic feet, instead of 6½ per cent of 5,848,495,000 cubic feet as shown by the evidence.

(hh) The disallowance of any amount for the actual and necessary annual expense of installing collar leak clamps on iron and steel screw pipe, and which amounted to $37,985.82 for the year ending December 31, 1929.

(6) In holding that Sections 4 and 5 of Article XVIII of the Constitution of Ohio and Sections 614-46; 499-8; 499-9; 499-13; 614-49 and 614-50 of the General Code of Ohio are valid and do not deprive the owners of their property without due process of law, and do not deny to them the equal protection of the law contrary to the provisions of Section One of Article Fourteen of the Articles in Addition to and Amendment of the Constitution of the United States, which Constitution and Statutes are interpreted by said Court as:

[fol. 137] (a) Requiring the allocation of transmission property and expenses on a demand-mileage basis but permitting the allocation of production property and expenses and general property and expenses on a sales basis;

(b) Forbidding any allowance in rates fixed thereunder of any return upon the value of gas leaseholds not yet drilled but owned and used as the source of supply of natural gas, and indispensable to the continuance of the business;

(c) Forbidding any allowance for depletion of wasting assets, and particularly gas leaseholds and gas wells and the equipment therein (Accounts No. 211 and 212);

(d) Forbidding any allowance in rates fixed thereunder for amortization of the property of a natural gas producing and transmission company; and

(e) Forbidding any allowance for rentals actually paid on gas leaseholds not yet drilled but held, owned and used as the source of supply of natural gas, and indispensable to the continuance of the business.

(7) In failing to read the record and exhibits upon which the order of The Public Utilities Commission was made, and thereby denying to plaintiff in error due process of law contrary to the provisions of Section One of Article Fourteen of the Articles in Addition to and Amendment of the Constitution of the United States.

(8) The decision and/or judgment of said Court is contrary to the evidence, is not supported by the evidence and is manifestly against the weight of the evidence.

(9) In sustaining the validity of a statutory rate or price for natural gas and in holding that such rate or price, and

the Statutes of Ohio which the Court holds require such rate or price, do not impair the obligations of contracts contrary to Section Ten of Article One of the Constitution of the United States, which rate requires the payment for natural gas at the gateways of the City of Columbus, of a price less than the price fixed by the contract; Company Exhibit No. 11, entered into as of the 1st day of July, 1929, between The Columbus Gas and Fuel Company and The Ohio Fuel Gas Company.

[fol. 138] (10) In sustaining the validity of a statutory rate or price for natural gas and in holding that such rate or price, and the statutes of Ohio which the Court holds require such rate or price, do not impair the obligations of contracts contrary to Section Ten of Article One of the Constitution of the United States, which rate requires the payment of a price for natural gas at the Ohio-West Virginia state line, less than the price fixed by the contract, Company Exhibit No. 58, made on the 31st day of October, 1927, by and between United Fuel Gas Company, a West Virginia corporation, and The Ohio Fuel Gas Company, an Ohio Corporation.

Wherefore The Columbus Gas and Fuel Company prays that the judgment of the Supreme Court of the State of Ohio in the above entitled consolidated cause be reversed and for such other and further relief as to the Court may seem just and proper.

Dated this 20th day of September, 1933.

Edward C. Turner, Albert M. Calland, Attorneys for The Columbus Gas and Fuel Company.

[fols. 138a–154] [File endorsement omitted.]

[fol. 155] SUPREME COURT OF THE UNITED STATES

No. 23864

THE COLUMBUS GAS AND FUEL COMPANY, Plaintiff-in-Error,

vs.

THE PUBLIC UTILITIES COMMISSION OF OHIO, Defendant-in-Error

No. 23868

THE CITY OF COLUMBUS, OHIO, Plaintiff-in-Error,

vs.

THE PUBLIC UTILITIES COMMISSION OF OHIO, Defendant-in-Error

Consolidated by Order of the Court Dated the 25th day of April, 1933

ORDER ALLOWING APPEAL—Filed Sept. 28, 1933

The Appellant in the above entitled consolidated cause having prayed for the allowance of an appeal therein to the Supreme Court of the United States from the judgment made and entered in the above entitled consolidated cause by the Supreme Court of the State of Ohio on the 20th day of September, 1933, and from each and every part thereof, and having presented and filed its Petition for Appeal, Assignment of Errors and Prayer for Reversal, pursuant to the statutes and the rules of the Supreme Court of the United States in such case made and provided;

It is now here ordered that an appeal be, and the same is hereby allowed to the Supreme Court of the United States from the Supreme Court of the State of Ohio in the above entitled consolidated cause, as provided by law, and it is further ordered that the Clerk of the Supreme Court of the State of Ohio shall prepare and certify the transcript of the record, proceeding and judgment in said consolidated cause and transmit the same to the Supreme Court of the United States, so that he shall have the same in said Court within forty days of this date.

And it is further ordered that security for costs on ap-
[fol. 156] peal be fixed in the sum of $1,000.00.

Dated September 28, 1933.

Carl V. Weygandt, Chief Justice of the Supreme Court of Ohio.

[fol. 156a] [File endorsement omitted.]

[fols. 157 & 158] Cost Bond on appeal for $1,000.00, approved and filed Sept. 28, 1933, omitted in printing.

[fols. 159-161] Supersedeas Bond on appeal for $50,000, approved and filed Sept. 28, 1933, omitted in printing.

[fol. 162] [File endorsement omitted]

IN SUPREME COURT OF OHIO

No. 23864

No. 23868

[Titles omitted]

Consolidated by Order of This Court Dated the 25th Day of April, 1933

AGREEMENT AS TO DEPOSITS, ETC.—Filed Sept. 28, 1933

The Columbus Gas and Fuel Company, pursuant to the order of supersedeas herein granted by the Chief Justice of the Supreme Court of Ohio in the above entitled causes, hereby agrees to deposit in The Ohio National Bank of Columbus, Ohio, Trustee, all monies collected after the date hereof from consumers in the City of Columbus, Ohio, as payment for natural gas in excess of the rate or price of 76 cents as a minimum per month per customer, without discount, and 48 cents for each 1,000 cubic feet of natural gas, with an additional charge of 5 cents for each 1,000

cubic feet of natural gas if the monthly bills are not paid within a prescribed time, fixed and determined by Ordinance No. 645-29, enacted by the City of Columbus, Ohio; said monies to be held for the benefit of and promptly delivered to either said The Columbus Gas and Fuel Company or its consumers in the City of Columbus as their respective rights may be determined according to the decision of the [fol. 163] Supreme Court of the United States in the above entitled consolidated cause and pursuant to final order made in the Supreme Court of Ohio in said consolidated cause: Said monies are to be deposited by said The Columbus Gas and Fuel Company once a month on the 20th day of each month for such collections made during the preceding calendar month until such time as said consolidated cause is finally decided and/or said ordinance shall have expired. Said monies to be placed in a special escrow deposit, to be held in trust by said Bank, and to be regarded as time deposits, withdrawable, in the manner hereinafter provided only after forty days' written notice to said Bank, and said Bank shall allow and credit said fund with interest at the rate of 1 per cent per annum at monthly intervals. Said The Ohio National Bank shall secure said special escrow deposits in the manner provided by law and/or regulations governing the pledging, by National Banks, of security for cash held in trust which is deposited in the commercial or savings departments of such banks. Said special escrow deposits as made shall be evidenced by appropriate receipts issued in duplicate by The Ohio National Bank, one copy of which shall be delivered to the Clerk of the Supreme Court of Ohio, and one copy of The Columbus Gas and Fuel Company, which receipts shall acknowledge receipt of the funds deposited with said Bank and recite that said funds are received and will be held and disposed of subject to the orders of the Supreme Court of Ohio. No part of said funds, whether principal or interest, shall be paid over or released by said The Ohio National Bank excepting upon and as may be provided in the further order or orders of the Supreme Court of Ohio.

In witness whereof, the said The Columbus Gas and Fuel [fol. 164] Company, by its attorneys, and the said The City of Columbus, Ohio, by its City Attorney and Special Coun-

sel, have hereunto set their hands this 28 day of September, 1933.

The Columbus Gas and Fuel Company, by Edward C. Turner, Albert M. Calland, Its Attorneys. The City of Columbus, by John L. Davies, Its City Attorney, and James M. Butler, James W. Huffman, Special Counsel.

The Ohio National Bank of Columbus, Trustee, hereby agrees to accept said deposits according to the above terms.

The Ohio National Bank of Columbus, Trustee, by Robert T. Crew, Vice President.

Approved this 28 day of September, 1933.

Carl V. Weygandt, Chief Justice of the Supreme Court of Ohio.

[fol. 165] Receipt

The Ohio National Bank of Columbus, Ohio, Trustee, has this day received from The Columbus Gas and Fuel Company of Columbus, Ohio, the sum of — Dollars, in current funds. This sum is to be held in escrow by the said Trustee, in accordance with agreement pursuant to supersedeas, entered on the 28th day of September, 1933, and approved by the Chief Justice of the Supreme Court of Ohio, in Cause No. 23864 and 23868, Consolidated, the entire sum, together with such interest as may accrue thereon, in accordance with said agreement, is to be distributed by said Trustee, in funds then current, only upon the further order and direction of said Court.

This receipt, in duplicate, is delivered this day of September, 1933, one to the Clerk of the Supreme Court of Ohio, and one to the Columbus Gas and Fuel Company of Columbus, Ohio.

The Ohio National Bank of Columbus, Ohio, Trustee, by ——, Vice President and Trust Officer.

[fol. 166] Certificate of lodgment omitted in printing.

[fols. 167 & 167a] Citation in usual form showing service on John W. Bricker et al., filed Sept. 28, 1933, omitted in printing.

[fol. 168] SUPREME COURT OF THE UNITED STATES

No. 23864

No. 23868

[Titles omitted]

Consolidated by Order of the Court Dated the 25th Day of April, 1933

ORDER OF SUPERSEDEAS—Filed Sept. 28, 1933

Whereas in certain proceedings pending in the Supreme Court of Ohio between The Columbus Gas and Fuel Company, Plaintiff-in-Error, and The Public Utilities Commission of Ohio, Defendant-in-Error, being No. 23864 on the docket of said Court, and between The City of Columbus, Ohio, Plaintiff-in-Error, and The Public Utilities Commission of Ohio, Defendant-in-Error, being No. 23868 on the dockets of said Court, which said proceedings were consolidated by order of the Supreme Court of Ohio dated the 25th day of April, 1933, a judgment was rendered against said The Columbus Gas and Fuel Company, and said The Columbus Gas and Fuel Company having obtained an order allowing an appeal, and filed a copy thereof in the Clerk's office of said Court to reverse the judgment in the [fol. 169] aforesaid suit, and a citation directed to said The Public Utilities Commission of Ohio, and the City of Columbus, Ohio, citing and admonishing them to be and appear at the Supreme Court of the United States at Washington within forty days from the date thereof, and has presented its bond with sureties thereon approved by the Chief Justice of the Supreme Court of the State of Ohio, and further conditioned that The Columbus Gas and Fuel Company impound in the Ohio National Bank of Columbus, Ohio, the difference between the ordinance rate of forty-eight cents (48¢) per thousand cubic feet and the rate of fifty-five cents (55¢) per thousand cubic feet fixed by The Public Utilities Commission of Ohio, collected from customers for natural gas delivered within the city of Columbus, Ohio, to be held pending the further orders of the Supreme Court of Ohio made pursuant to the final decision of the Supreme Court of the United States.

It is now here ordered that the judgment of said Supreme Court of Ohio, and the execution thereof be and the same are hereby suspended and stayed until the determination of said appeal by the Supreme Court of the United States.

Carl V. Weygandt, Chief Justice of the Supreme Court of Ohio.

[fol. 169a] [File endorsement omitted.]

[fol. 170] IN SUPREME COURT OF OHIO

No. 23864

No. 23868

Consolidated by Order of this Court Dated the 25th Day of April, 1933

[Titles omitted]

ORDER STAYING EXECUTION OF MANDATES—Filed Sept. 28, 1933

The above entitled consolidated cause having been appealed to the Supreme Court of the United States and a supersedeas having issued, it is ordered that the execution of the special mandates to The Public Utilities Commission of Ohio heretofore issued herein, be and the same hereby are stayed until disposition of the said cause by the Supreme Court of the United States.

Carl V. Weygandt, Chief Justice of the Supreme Court of Ohio.

Sept. 28, 1933.

[fols. 170a-172] [File endorsement omitted.]

[fol. 173] BEFORE PUBLIC UTILITIES COMMISSION OF OHIO

No. 5935

In the Matter of the Complaint and Appeal of THE COLUMBUS GAS & FUEL COMPANY from an Ordinance of the City of Columbus, Ohio, to Regulate the Price That May be Charged for Natural Gas in the City of Columbus

COMPLAINT

Now comes The Columbus Gas & Fuel Company and states:

(1) That it is an Ohio corporation engaged as a public utility in distributing natural gas for light, heat and power purposes to consumers in the City of Columbus, Franklin County, Ohio, and contiguous territory.

(2) That it is the owner of and is operating and doing business under a certain franchise granted by the City of Columbus to its predecessor in title, its successors and assigns, by Ordinance No. 4539 passed February 4, 1889, a copy of which ordinance is hereto attached, marked Exhibit "A" and made a part hereof as fully as if herein set forth.

(3) That it further claims to be the owner of a certain franchise contract resulting from the passage by the Council of the City of Columbus and the approval thereof by the acting Mayor of said City of Columbus of Ordinance No. 410-29, on June 3, 1929, and the written acceptance by complainant on or about June 17, 1929, of the terms and conditons of said Ordinance No. 410-29. The validity of said franchise contract is now the subject of litigation which can not be determined finally until after the expira-
[fol. 174] tion of the limitation of time for the filing of a complaint and appeal to this Commission. In filing this complaint and appeal, complainant does not intend to waive any right which it may have under said last mentioned franchise contract.

(4) That on November 5, 1929, the City of Columbus passed a certain ordinance entitled "On Ordinance No. 645-29—To regulate the price that may be charged for natural gas in the city of Columbus during the period of five years

from the 12th day of November, 1929, and providing for the submission of this ordinance to a referendum vote at the election to be held November 5, 1929." A copy of said ordinance is hereto attached, marked Exhibit "B" and made a part hereof as fully as if the same were here set out.

(5) That said Ordinance No. 645-29 was submitted to a vote of the qualified electors of the City of Columbus and was approved by a majority of those voting thereon at the election held on November 5, 1929, and said ordinance by its terms became effective from and after November 12, 1929.

(6) That it has not accepted said Ordinance No. 645-29.

(7) That it complains and states that the rate and price of seventy-five cents without discount as a minimum per month per customer and forty-eight cents for each one thousand cubic feet of natural gas, having heat value of not less than nine hundred British thermal units (gross) per cubic foot, with an additional charge of five cents for each one thousand cubic feet of natural gas consumed through each meter each month if the monthly bills are not paid within the time prescribed by the rules and regulations of complainant, as fixed in said ordinance for a period of five years from and after November 12, 1929, and being the maximum rate and price that may be charged for said service, is and will be unlawful, unjust, unreasonable and insufficient to yield a reasonable compensation for the service, having due regard to the value thereof and of all the property of complainant actually used and useful for the convenience of the public in furnishing said service [fol. 175] and to the necessity of making reservations from its income for surplus, depreciation, contingencies and such other matters as may be proper, including the purchasing of a supply of natural gas in order to furnish said service.

(8) That the provision or condition in said Ordinance No. 645-29 requiring the furnishing of natural gas having heat value of not less than nine hundred British thermal units (gross) per cubic foot is and will be unlawful, unjust, unreasonable and unfair.

(9) That the provision of a period of five years from and after the 12th day of November, 1929, by which said Ordi-

nance No. 645-29 requires complainant to furnish its gas at the prices and rates contained in said ordinance, is and will be unlawful, unjust, unreasonable and unfair.

Wherefore, complainant prays that the Commission give notice of the filing and pendency of this complaint and of the time and place of hearing, as required by law; that after hearing and investigation the Commission determine the rate and price so fixed by said Ordinance No. 645-29 to be unlawful, unjust, unreasonable and insufficient to yield reasonable compensation for the service, and determine and fix the just and reasonable rate and price to be charged, demanded, exacted and collected therefor, as required by law, and order the same substituted for the rate, charge and price fixed by said ordinance, and strike out such provisions and conditions of said Ordinance No. 645-29 in respect of the requirement of heat value of not less than nine hundred British thermal units (gross) per cubic foot and the period thereof as unlawful, unjust and unreasonable and order substituted therefor such provisions and conditions, if any, as the Commission may consider fair and reasonable.

The Columbus Gas & Fuel Company, by L. K. Langdon, Edward C. Turner, Attorneys for Complainant.

[fol. 176] *Duly sworn to by Raymond Cross. Jurat omitted in printing.*

[fol. 177] EXHIBIT "A" TO COMPLAINT

An Ordinance—No. 4539—Granting to the Columbus Natural Gas and Fuel Company the privilege of laying pipes in the streets, alleys and public places and grounds of the City of Columbus, for the purpose of conveying and supplying natural gas to consumers thereof. (Passed February 4, 1889.)

Section 1. Be it ordained by the city council of the city of Columbus, Ohio, That the Columbus Natural Gas and Fuel Company, a corporation organized under the laws of Ohio, and its successors and assigns, are hereby granted the privilege and invested with the right to use the streets, lanes, avenues, alleys, commons, bridges and public grounds of the city of Columbus, for the purpose of laying pipes to be used for carrying gas for public or private use in the

buildings and manufacturing establishments, and otherwise in said city, together with the right to dig and excavate in all of said streets, alleys, avenues, lanes, commons and public grounds for the purpose of laying such pipes and other appliances required to convey said gas to consumers thereof, upon the following conditions:

Sec. 2. No excavation shall be made for laying or placing pipes in High Street where paved with block stone or asphalt, or similar material, except when necessary to cross said street, and no excavation shall be made for laying or placing pipes in any other street paved or improved with stone block, asphalt, brick or fire brick, Hayden block or similar material, except when necessary and for the purpose of crossing the same.

Whenever practicable, pipes for conveying gas along and in the vicinity of such streets shall be placed in the alleys parallel therewith, and in case there be no alley, or it should be impracticable to lay pipes in alleys, then the pipes may be placed under the sidewalk inside the curbstone, provided that pipes so placed under sidewalks shall consist of an inner and an outer pipe, the former for the conveyance of gas, and the latter to be ventilated by pipes at intervals of one thousand feet, passing not less than ten feet above the surface of the street.

Sec. 3. In the work of laying and repairing pipes, the said company shall not unnecessarily obstruct nor interfere with the use and occupation of any street, lane, avenue, alley, commons, public place or grounds, and in no wise injure, interfere or change any existing arrangements for water or gas pipes, drains, sewers, ditches or other public or private works of said city, but before making any excavation or laying pipes in any street, the said company, its successors and assigns, shall furnish the city civil engineer a plat and plan of the proposed excavation, showing the depth and size of said pipes and location of stops and branches.

Sec. 4. The said company shall relay and replace within thirty days any and all pavements, curbs, gutters, streets, alleys, avenues and public places and grounds disturbed by it, in the same manner and like condition as the same may have been before making any excavation, leaving the surface of all unpaved streets and places smooth and level.

[fol. 178] Sec. 5. The said company shall preserve and keep the city safe, free and harmless from any damages, costs or expense that may be incurred or happen to persons or property by reason or on account of anything done by said company, under the provisions of this ordinance, and to defend, at its own proper costs, any suits brought against the city by persons or corporations claiming damages on account of the creation or maintainance of the plant of said company.

Sec. 6. The pressure of gas in the pipes laid in the city limits shall not exceed ten pounds per square inch as registered by suitable gauges, to be provided by said company, unless the pipe containing said gas at any higher pressure be enclosed in a larger pipe, which shall be ventilated at regular intervals of three hundred yards by pipes passing into the air at least ten feet above the surface of the ground.

Sec. 7. This privilege is granted upon the condition that gas shall be brought or furnished at the corporate limits of the city and pipes laid for its distribution within three years from the passage of this ordinance.

The privileges granted by the provisions of this ordinance shall not be forfeited by temporary suspension of operations unless such suspension be for a period of six months or more, when the city council may declare all privileges and rights herein conferred forfeited.

Sec. 8. This ordinance shall take effect from and after its passage and publication according to law.

[fol. 179] EXHIBIT "B" TO COMPLAINT

September 3, 1929.

An Ordinance—No. 645-29—To regulate the price that may be charged for natural gas in the City of Columbus during the period of five years from the 12th day of November, 1929, and providing for the submission of this ordinance to a referendum vote at the election to be held November 5, 1929

Be it ordained by the council of the city of Columbus:

Section 1. That for the period of five years from and after the 12th day of November, 1929, any person, firm or

corporation having the right to lay and maintain pipes and mains in the streets, alleys and public grounds of the city of Columbus for the purpose of carrying and distributing natural gas for public or private consumption, or that carries and distributes such gas, shall be entitled to charge for such natural gas for lighting and fuel purposes, furnished to any and all persons in the city of Columbus, or for use on any public grounds, buildings, streets, lanes, alleys or avenues of said city, the following rates:

Seventy-five cents as a minimum per month per customer, from which there shall be no discount.

Forty-eight cents for each 1,000 cubic feet of natural gas, having heat value of not less than 900 British thermal units (gross) per cubic foot, consumed through each meter each month, with an additional charge of 5 cents for each 1,000 cubic feet of natural gas consumed through each meter each month if the monthly bills are not paid within the time prescribed by the rules and regulations of said person, firm or corporation having such right, or that is engaged in carrying and distributing such gas. And provided further, that no extra or additional charge shall be made for meter rentals, and that during all of said time, no person, firm or corporation shall, in any event, charge more for natural gas so furnished than the prices herein specified.

Sec. 2. That this ordinance shall be submitted to a vote of the qualified electors of the city at the election to be held on the 5th day of November, 1929, in accordance with the provisions of the charter of the city of Columbus, and at the regular voting places in said city, and said election shall be conducted, canvassed and certified in the same manner as other general municipal elections.

That the form of the ballot shall be:

"Referendum Ballot

On the question: shall "An Ordinance No. 645-29, passed September 3, 1929:

'To regulate the price that may be charged for natural gas in the city of Columbus during the period of five years from the 12th day of November, 1929, and providing for

the submission of this ordinance to a referendum vote at the election to be held November 5, 1929.' (Said rate being 48 cents net per 1,000 cubic feet of natural gas consumed through each meter each month, with 75 cents minimum charge.)

be approved or rejected:

[fol. 180] For the Ordinance —.
Against the Ordinance —.''

That the mayor be and he is hereby directed to give public notice of the time and place of holding said election in the manner provided by law.

That the clerk be and he is hereby directed to certify a copy of this ordinance to the deputy state supervisors and inspectors of elections for Franklin County, Ohio.

Sec. 3. That this ordinance shall take effect and be in force from and after November 12, 1929, if it shall have been approved by a majority of those voting thereon at the election to be held on November 5, 1929, otherwise to be null and void.

Passed September 3, 1929.
Fred P. Zimpfer, President Pro Tem. of Council.

Approved September 3, 1929.
Scott Wehe, Acting Mayor.

Attest: Howard S. Wilkins, City Clerk.

[fol. 181] Before Public Utilities Commission of Ohio

No. 5935

[Title omitted]

Stipulation as to Certain Facts

Now come the respective parties and submit the following stipulation, to-wit:

Subject to all questions of relevancy, materiality, competency and/or admissibility, it is admitted by the Complainant and the City of Columbus

(1) That Complainant, The Columbus Gas and Fuel Company, is an Ohio corporation engaged as a public utility in the distribution of natural gas for light, heat and power purposes to consumers in the City of Columbus, Franklin County, Ohio, and contiguous territory.

(2) That the Council of the City of Columbus duly passed a certain ordinance entitled "An Ordinance No. 645-29—To regulate the price that may be charged for natural gas in the City of Columbus during the period of five years from the 12th day of November, 1929, and providing for the submission of this ordinance to a referendum vote at the election to be held November 5, 1929." The said ordinance was duly approved by the Mayor of said City of Columbus. A copy of said ordinance is hereto attached marked Exhibit "A" and made a part hereof as fully as if the same were here set out.

[fol. 182] (3) That said Ordinance No. 645-29 was submitted to a vote of the qualified electors of the City of Columbus and was approved by a majority of those voting thereon at the election held on November 5, 1929, and said ordinance by its terms became effective from and after November 12, 1929.

(4) That said The Columbus Gas and Fuel Company had not prior to the filing of this Appeal and Complaint accepted said Ordinance No. 645-29.

(5) It is mutually stipulated by and between the parties that, for the purposes of ascertaining or stating any necessary or proper inventories, reproduction costs, depreciations, values, calculations, rate bases, incomes and expenses, the effective date of said Ordinance No. 645-29 shall be considered as of December 31, 1929, instead of November 12, 1929, and that the said December 31, 1929, shall be considered the day certain for all of said matters.

The Columbus Gas and Fuel Company, by (Signed) L. K. Langdon, Edward C. Turner, Its Attorneys.
The City of Columbus, by James M. Butler, James W. Huffman, John L. Davies, Its Attorneys.

[fol. 183] BEFORE PUBLIC UTILITIES COMMISSION OF OHIO

No. 5935

[Title omitted]

PRÆCIPE

To the Public Utilities Commission of Ohio:

Please issue subpœna duces tecum for L. A. Seyffert, as Treasurer of The Ohio Fuel Gas Company, 99 North Front Street, Columbus, Ohio, to appear before the Commission at the hearing of the above entitled matter on the 6th day of January, 1931, at 10:00 o'clock A. M., commanding him to bring with him the following data from the books of The Ohio Fuel Gas Company, based upon the year ending June 30, 1930:

(a) The average rate which The Ohio Fuel Gas Company received for gas from all sources, together with the quantity of gas sold.

(b) The quantity sold and rate received for residential gas.

(c) The quantity sold and rate received for commercial gas.

(d) The quantity sold and rate received for municipal and other public building gas.

(e) The quantity sold and rate received for industrial gas.

(f) The quantity sold and rate received for field gas.

(g) The quantity sold and rate received for gas sold at wholesale to non-members of the Columbia group.

(h) The weighted average of the foregoing sales.

(i) The quantity sold and rate received from inter-company sales.

(j) The grand average rate received.

(k) The Ohio Fuel Gas Company's purchases, in amount and rate, from related companies.

(l) The Ohio Fuel Gas Company's purchases from non-related companies—the amount and rate.

[fol. 184] (m) The Ohio Fuel Gas Company's purchased gas expense.

(n) The capital stock outstanding of each The Columbus Gas and Fuel Company, The Federal Gas and Fuel Company and The Ohio Fuel Gas Company.

(o) The fixed capital of each The Columbus Gas and Fuel Company, The Federal Gas and Fuel Company and The Ohio Fuel Gas Company.

(p) The earnings or loss for each of said last mentioned companies for the year ending June 30, 1930.

(q) The fotal fixed capital of all of the last mentioned companies.

(r) The total net revenue of said last mentioned companies for the year ended June 30, 1930.

(s) The rate of return which the net revenue for the year ended June 30, 1930, gave upon the aggregate fixed capital of said last mentioned companies.

(t) A copy of any valuation of the physical property of The Ohio Fuel Gas Company as of December 31, 1929.

(u) A copy of any valuation of the intangibles of The Ohio Fuel Gas Company as of December 31, 1929.

(v) Balance sheet of The Ohio Fuel Gas Company as of December 31, 1929.

(w) Operating statements of The Ohio Fuel Gas Company for three years preceding December 31, 1929.

(x) Dividend history of The Ohio Fuel Gas Company for three years preceding December 31, 1929.

(y) An analysis of the cost to The Ohio Fuel Gas Company of the gas furnished to The Columbus Gas and Fuel Company as of December 31, 1929.

(z) Copy of the contract between The Ohio Fuel Gas Company and United Fuel Gas Company, whereby The Ohio

Fuel Gas Company purchases gas from the United Fuel Gas Company.

Respectfully submitted, L. K. Langdon, Edward C. Turner, Attorneys for The Columbus Gas and Fuel Company.

[fol. 185] BEFORE PUBLIC UTILITIES COMMISSION OF OHIO

OPINION ON MOTIONS

The Commission comes now to consider the matter presented by the motions of the City of Columbus requiring:

1. The Gas Company to furnish a detail of the unit prices for The Ohio Fuel Gas Company, comparable to that given for The Columbus Gas and Fuel Company property in Exhibit No. 6.

2. To require The Columbus Gas and Fuel Company to make proper allocation of the property of The Ohio Fuel Gas Company used and useful in rendering the service to the City of Columbus and likewise such an allocation of the expenses and operating charges.

3. To require The Columbus Gas and Fuel Company to furnish the inventory and appraisement, operating costs and expenses of The United Fuel Gas Company, which supplies gas to the Ohio Fuel Gas Company.

The constitution of Ohio as adopted in 1912 in Article 18, particularly Sections 3, 4, 5 and 6, makes the municipality the unit in Ohio to be considered in utility matters. The power to contract is primarily in the City, as is the power to operate municipal utilities.

The statutes of Ohio recognize the municipality as the unit whereby and wherein rates and services shall be determined in all utility matters.

This Commission has heretofore issued an order requiring evidence of the reasonableness of the gate rate price in The Dayton Power and Light Company case. If that order is to be effective and avail this Commission of the information desired, it will be necessary that the reasonableness of the gate rate price be determined—not as for the State of Ohio as a whole but as for the City of Colum-

bus or any other municipal unit which might be under consideration.

The Commission believes there is and should be a dedication of all of this property used and useful in rendering the service to the people of Columbus from the wells to the last distribution pipe. We cannot consider that such would be a penalty for common ownership or holding company management, but rather an assurance of a reasonable rate upon all the property of these companies used and useful in rendering the particular service.

We believe in this instance it is the duty of the Commission to look beyond the corporate entities to see the real nature of the service and the real ownership of the property before determining the reasonableness of the rate.

Added confidence has been given to the Commission in the position taken in The Dayton Power and Light Company case, by reason of the decision of the Supreme Court of the United States in the case of Smith vs. Illinois Bell [fol. 186] Telephone Company, decided December 1, 1930. In that decision, the Supreme Court of the United States held that the Federal Court should have made findings as to the net earnings of The Western Electric Company realized in the sale of equipment to licenses of the Bell system and the extent which if at all such profit figures in estimates upon which charge of confiscation is predicated and found, further that there should be a specific finding by the statutory Court with regard to the cost of the license contract service to the parent company and the reasonable amount which should be allocated to the interstate and intrastate business. The Court there assumed that there must be a finding—not of the net earnings of the entire business of the parent company, but of the particular business in which the company under consideration was concerned.

It would be a vain thing for this Commission to take the position that we can determine the reasonableness of the gate rate and yet could not require all of the evidence necessary upon which to predicate such a finding. It is not an impossible nor extraordinarily difficult matter to secure the information sought in the motions here under consideration. It is certainly not more difficult than for The Western Electric to segregate its shop costs as to the particular units furnished the licensee companies or The American Company to evaluate the service of the great engineering staff under the license contract.

It seems to the Commission in this case that there is as complete a monopoly of the production, transmission and delivery of gas as could be effected, insofar as the City of Columbus is concerned.

If State regulatory authority is to be preserved it must be made effective and unless it can reach to every element which materially effects the ultimate rate to the consumer, such regulatory body is rendered more or less powerless to properly perform its functions. The ultimate end of such a trend will be a break-down of the system as we see it now and a further tendency toward Federalized control, which is a step further removed from the consumer and which would effectually prohibit the proper functioning of the municipalities of Ohio as contemplated within the Constitution hereinbefore referred to.

With these facts in mind therefore, it is the opinion of the Commission that the three motions submitted by the City of Columbus, should be sustained.

[fol. 187] BEFORE PUBLIC UTILITIES COMMISSION OF OHIO

No. 5935

[Title omitted]

APPLICATION AND MOTION OF THE CITY OF COLUMBUS, OHIO

The City of Columbus, Ohio, most respectfully suggests to the Commission that the Record in this case shows that heretofore, on January 21, 1931, upon the application, request and motion of the City of Columbus, Ohio, and after full argument and consideration, the Commission directed and ordered the Complainant, The Columbus Gas & Fuel Company, as particularly disclosed on pages 1008-1011 of said Record, as follows:

"Commissioner Bricker: The motions that Mr. Butler submitted this morning have had the consideration of the Commission. They presented three distinct issues:

First, asking this Commission to require the Gas Company to furnish a detail of the unit prices for The Ohio Fuel Gas Company, comparable to that given for The Columbus Gas & Fuel Company property in Exhibit No. 6.

Second: To require The Columbus Gas & Fuel Company to make proper allocation of the property of The Ohio Fuel Gas Company used and useful in rendering the service to the City of Columbus and likewise such an allocation of the expenses and operating charges.

Third: To require The Columbus Gas & Fuel Company to furnish the inventory and appraisement, operating costs and expenses of The United Fuel Gas Company, which supplies gas to The Ohio Fuel Gas Company.

I presume that in that motion is implied also an inference that it should be required to furnish that data to the extent that The Ohio Fuel Gas Company is required.

Mr. Butler: Yes, Your Honor." * * *

[fol. 188] "Mr. Bricker: With these facts in mind, therefore, it is the opinion of the Commission that the three motions submitted by the City of Columbus should be sustained.

Mr. Turner: Note an exception to the sustaining of each and every one of them, * * *".

The City of Columbus further shows the Commission that:

(1). The Complainant has complied with the things required in the first motion or paragraph;

(2). The Complainant has failed and refused to comply with that part of the second motion or paragraph that requires an allocation of the property of The Ohio Fuel Gas Company used and useful in rendering service to the City of Columbus, and likewise such an allocation as to the expenses and operating charges.

(3) The Complainant has failed and refused to comply with the third motion or paragraph and is wholly failing and refusing to furnish the required inventory and appraisement, unit costs and allocations, and each and everyone of them, in respect to the United Fuel Gas Company.

The City of Columbus further submits to the Commission the said Record already made in this case, which discloses and establishes the existence of the Columbia System "as a single operating unit" and the complete domination by Co-

lumbia Gas & Electric Corporation of all of its many subsidiary companies, including the Complainant, The Columbus Gas & Fuel Company, The Ohio Fuel Gas Company and the United Fuel Gas Company.

The City of Columbus further shows the Commission that, although there are available to the Complainant and to The Ohio Fuel Gas Company and to the United Fuel Gas Company and to the Columbia Gas & Electric Corporation the inventories and appraisals, and the materials, reports [fol. 189] and studies, necessary for a full compliance with the said orders of the Commission, this Complainant has refused, and still is defiantly refusing, to make compliance in the respects mentioned above.

The City of Columbus submits to the Commission its requests and motions heretofore made, including the opinion and orders of the Commission of January 21, 1931, and also the motions and requests made by the City of Columbus in open hearing on Thursday, April 9, 1931, all of which are fully shown by said Record.

Therefore, the City of Columbus, submitting that the said Record fully and clearly shows that the cost or charge for gas to the Complainant, The Columbus Gas & Fuel Company, at the city gates of Columbus, Ohio, cannot be properly or fairly or adequately determined without ascertaining and determining the various costs back through the various companies to the respective productions, including at least The Ohio Fuel Gas Company and the United Fuel Gas Company, the City of Columbus requests and moves the Commission:

(1). That the Commission enforce its said orders of January 21, 1931;

(2). That the Commission re-order the Complainant to make compliance therewith;

(3). That the Commission, upon the further refusal of the Complainant so to comply, adjourn this case for a certain period, with the belief and hope that the Complainant will recede from its defiant attitude;

(4). And that, if at the expiration of the time so fixed, the Complainant still persists in its defiance and still refuses to make compliance with said orders in the respects noted, the Commission enter an order continuing the further hear-

[fol. 190] ing of this cause until such time as the Complainant has made proper compliance with the said orders.

The City of Columbus prays and moves the Commission to make such further orders in the premises as are necessary and proper to enforce the said former orders, to preserve the rights of the City of Columbus and to assert and maintain the authority of the Commission in the premises.

The City of Columbus, Ohio, by John L. Davies, Its City Attorney. James M. Butler, James W. Huffman, of Counsel for the City of Columbus, Ohio.

[fols. 191 & 191a] BEFORE PUBLIC UTILITIES COMMISSION OF OHIO

No. 5935

[Title omitted]

ORDER—April 25, 1931

The Commission, having under consideration the motion of the City of Columbus for the production of certain additional evidence herein, it is

Ordered, That appellant, The Columbus Gas and Fuel Company be, and hereby it is notified, directed and required on Wednesday, May sixth, 1931, at one-thirty o'clock p. m., Eastern Standard Time, at the hearing room of this Commission, to present and file herein, as a deposition or by a Certificate of the Public Service Commission of West Virginia, a complete copy of the record (comprising the pleadings, testimony and exhibits, which shall include specifically the inventory and appraisal of the property of The United Fuel Gas Company and the Warfield Natural Gas Company, and the findings and order) of the Public Service Commission of West Virginia in the proceeding before said Commission entitled "Investigation of rates of The United Fuel Gas Company for furnishing natural gas service stated in P. S. C. West Virginia No. 4". Case No. 1926.

To which order of the Commission, the said City of Columbus, and said The Columbus Gas and Fuel Company, each then excepted, here now except, and their exceptions here are noted of record.

It is further ordered, That this proceeding be, and hereby it is assigned for further hearing Monday, June eighth, 1931, at ten o'clock a. m., Eastern Standard Time, at the hearing room of the Commission in the State Office Building, Columbus, Ohio, when the City of Columbus, Ohio, the respondent herein, shall begin the presentation of its case.

To which order of the Commission, the said City of Columbus then excepted, here now excepts and its exceptions are noted of record.

The Public Utilities Commission of Ohio, E. J. Hopple, Chairman; John W. Bricker, Frank W. Geiger, Commissioners.

Dated at Columbus, Ohio, this 25th day of April, 1931.

A true copy:

Ira E. Sprankle, Superintendent of Investigation.

[fol. 192] BEFORE PUBLIC UTILITIES COMMISSION OF OHIO

No. 5935

In the Matter of the Complaint and Appeal of THE COLUMBUS GAS & FUEL COMPANY from an ordinance of the City of Columbus to Regulate the Price That May be Charged for Natural Gas Within the City of Columbus

OPINION

The City Council of the City of Columbus, on the 3rd of September, 1929, under an appropriate statute, enacted an ordinance designated as No. 645-29:

"To regulate the price that may be charged for natural gas in the City of Columbus during the period of five years from the 12th day of November, 1929, and providing for the submission of the ordinance to a referendum vote at the election to be held November 5, 1929."

The ordinance provided the following rates:

"Seventy-five cents as a minimum per month per customer, from which there shall be no discount.

"Forty-eight cents for each thousand cubic feet of natural gas, having heat value of not less than nine hun-

dred British thermal units (gross) per cubic foot consumed through each meter each month,"
with a penalty of five cents if the bills are not paid within the time prescribed by the rules of the company.

It is further provided that "no extra or additional charge shall be made for meter rentals."

This ordinance was submitted to the electors of the city on the 5th of November, 1929 and approved. The Columbus Gas & Fuel Company, one of the two companies furnishing gas within the limits of the city, not being satisfied with the ordinance, filed its appeal with this Commis-
[fol. 193] sion under Sections 614-44 et seq. These sections provide in substance that the city may pass an ordinance fixing the gas rate, and that the utility, if not satisfied, may file a complaint with the Commission, and that the Commission on such complaint may proceed to fix just and reasonable rates. If the Commission, after a hearing, shall be of the opinion that the rate fixed by ordinance is unjust and unreasonable or insufficient to yield reasonable compensation for the service rendered, it shall, with due regard to the value of all the property of the public utility actually used and useful for the convenience of the public, exclusive of any value added thereto by reason of the monopoly or merger, and with due regard to the necessity of making reservations from income for surplus, depreciation and contingencies and such other matters as may be proper according to the fact in each case, fix a just and reasonable rate to be charged during a period fixed by ordinance, which shall not be less than two years, and order the same substituted for the rate fixed by ordinance, or the Commission may find that the rate so fixed by the ordinance is just and reasonable and ratify and confirm the same.

The Columbus Gas & Fuel Company—Historical

The Columbus Gas & Fuel Company and its predecessors has been distributing natural gas in the City of Columbus since 1890 at various rates. In 1901 the rate was fixed at 35 cents for a period of ten years, which was afterwards extended for a period of five years. In 1921 the rate was fixed for three years at 45 cents for the first 10,000 cubic feet, increasing to 65 cents for all over 20,000 cubic feet.
[fol. 194] In 1924 the rate was fixed at 40 cents. On June

3, 1929, Council passed an ordinance fixing the rate at 75 cents minimum and 60 cents and 55 cents for larger quantities, which ordinance also provided for the settling of all existing litigation between the city and the company.

In December, 1929, the United States District Court held that this latter ordinance did not constitute a contract, because it had not been submitted to a vote of the people. This decision was subsequently affirmed by the United States Circuit Court of Appeals. The City Council, having repealed the ordinance of June 3, 1929, passed, on September 3rd, the forty-eight cent ordinance, which was approved by the electors but not accepted by the company, and is the basis of the present controversy.

In the earlier period of service to the city of Columbus, gas was produced by the companies so serving it in the fields of Licking and Knox Counties. In later periods a contract was made by the distributing company with The Ohio Fuel Supply Company and its successors, which producing companies were compelled to resort to some distant points of production, purchasing in West Virginia and Kentucky some of the gas sold to the local company. In the earlier periods of distribution the supply of gas was uncertain, so that the distribution to the consumers in Columbus was insecure. In later years The Ohio Fuel Supply Company and The United Fuel Company have extended their facilities to such an extent that the supply is now certain and dependable.

[fol. 195] Interrelated Companies

The Columbia Gas & Electric Corporation is the holding Company of the common stock of The Columbus Gas & Fuel Company and also of The Ohio Fuel Gas Company, from which the local distributing company obtains its gas at wholesale rate at the Columbus gateway. It is also the holder of the common stock of The United Fuel Gas Company, a producing company south of the Ohio River, from which gas is purchased by The Ohio Fuel Gas Company, part of which is sold to Columbus and part distributed throughout other portions of Ohio. In some municipalities in Ohio The Ohio Fuel Gas Company is the distributing company, serving these communities without the intervention of a local distributing company.

The Columbia Engineering & Management Corporation, also a subsidiary of The Columbia Gas & Electric Corporation, is an interrelated company whose function is to supervise the management of the producing, transmission and distributing companies, and to make the contracts on behalf of each company with the other. For this service so rendered by the management company a charge is made of from two to two and one-half per cent. on the gross earnings of the several companies so managed by it. We will deal with this company more at length later in this opinion.

It is thus apparent that the company distributing gas as a public utility within the city of Columbus is closely interrelated with the producing, transmission and management corporation whose common stock in turn is held by the Columbia Gas & Electric Corporation, the parent company.

[fol. 196] The Position of the Commission

The Commission early took the position that inasmuch as these companies were so intimately related, in order to determine whether or not the rate charged to the ultimate consumer was a fair one, it was obviously necessary to examine the entire structure to ascertain whether the rate charged by The Ohio Fuel Company at the gateway was justified.

At the beginning of the Commission's investigation this was a pioneer service inasmuch as no court of final resort had definitely passed upon the right of the Commission to extend its examination beyond the gateway of the city whose ordinance was under investigation. The case tried and determined by the Hon. Judge Benson R. Hough did not extend beyond the gateway, and the contract between the supplying and distributing company was to the effect that the supplying company should have 65% and the distributing company 35% of the rate charged the consumer. Judge Hough determined at that time that the rate to the consumer should be 48 cents, 65% of which, amounting to 31.20 cents was fixed as the gate rate, and 35%, amounting to 16.80 cents, was the distribution charge.

During the Commission's consideration of the case, the decision in Smith v. The Illinois Bell Telephone, 282 U. S. 183, (75 L. Ed. 257) was announced by the United States Supreme Court. This case involved, among other things,

the interrelated Bell Telephone organization and gave approval to the Commission's right to examine into the profits that may have been derived by a related non-regulated company from its contract with the regulated utility. The Court held that there should be a finding as to the net earn-[fol. 197] ings of an affiliated company and the extent to which such profit figures in the estimates upon which a charge of confiscation is predicated. The Commission has always felt that it had the right to carefully scrutinize the contracts made between affiliated companies, even though one may not be within the control of the Commission, in order to determine to what extent the unregulated company may have derived unjust profits by an overcharge to the regulated company.

At a later date the Supreme Court decided the case of Western Distributing Company v. The Public Service Commission of Kansas, which directly involved a gate rate in a gas case. This case was decided February 29, 1932, 52 U. S. 283, (76 L. Ed. 404). It was there held:

1. An inquiry by a State Commission into the reasonableness of amounts paid by a local distributing utility for its gas supply under contract with a wholesale interstate supply company, where both companies are controlled by a common parent concern, is not an attempted interference with interstate commerce * * * where the Commission confines its efforts to determining the reasonableness of the expenses of the local distributing subsidiary;

2. A subsidiary distributing gas utility, before being allowed an increase in its rates, * * * may properly be required to offer satisfactory evidence with respect to all costs which enter into the ascertainment of a reasonable rate, including reasonableness of rates paid to an affiliated wholesale supply company under a contract which was entered into in the absence of an arm's length bargain between the two corporate entities involved.

3. The fact that a certain gas rate between a wholesale * * * supply company and other distributing utilities had been found reasonable was * * * not * * * prima facie evidence as to the reasonableness of such wholesale [fol. 198] rate * * *;

4. Allegations by a distributing utility company that the wholesale price paid * * * to an affiliated supply com-

pany was the lowest that it could obtain from the latter, or from any other available source of supply was * * * meaningless in view of the intercorporate control exercised by a common parent concern over both companies.

The effect of this decision is to give to the Commission the right to determine whether or not the gate rate charged by an affiliated company, which is not a utility, to the distributing company, which is a utility, is reasonable, and the Commission is entitled to a fair showing of such reasonableness even though it may involve such a presentation of evidence as would not be required in the case of parties dealing at arm's length.

The burden is thus placed upon the company to fairly show that the gate rate is reasonable. This, in our judgment, does not involve the obligation to present, in relation to the supplying company, that character of evidence which by the statute is required to be presented when the rate charged by the distributing company, as a public utility, is under investigation. The obligation that is imposed upon the utility is to present such evidence as will enable the Commission to determine whether or not the gate rate is reasonable, and any competent evidence upon this point may be considered, whether it presents the theoretical reconstruction of the property of the supplying company, or any other evidence from which the Commission may determine the fairness of the gate rate.

The case, however, does definitely exclude from the consideration of the Commission that evidence which seeks to [fol. 199] establish the fairness of the gate rate by proof that the price was the lowest that could be obtained by the distributing company from the supplying company or from any other available source of supply. Under this rule much testimony presented by the company to the effect that the gate rate at Columbus was the same or lower than that charged at other places, and that there was no other source of supply to the distributing company, must be excluded from our consideration.

The company did present a mass of testimony touching every detail of the great system which has been built up for the purpose of acquiring and developing gas land throughout the states of Ohio, West Virginia and to some extent in Kentucky, and of the transportation of gas from the fields

to the points of ultimate distribution. In addition to the lands now used as a present source of supply, it also developed the fact that the company holds in reserve under lease hundreds of thousands of acres of lands not yet developed but which are a potential reservoir which must be controlled in order that a continuous supply of gas may be assured such as will justify the investment of large sums of money in transportation and distributing systems.

The Commission has had opportunity to examine expensive equipment including powerful compressor stations where batteries of from eight to sixteen engines, each of 1500 horse power, force the gas that has been collected from widely separated wells, under high pressure to the place of consumption through hundreds of miles of transmission pipe of large diameter.

The Commission has gained some conception through [fol. 200] many expert witnesses, having undoubted skill and experience, of results accomplished by the intelligent expenditure of capital in an enterprise whose hope of reward rests upon its ability to furnish to many small consumers a commodity, the enjoyment of which is eagerly sought. The Commission has been impressed with the fact that this great natural resource could not have benefited the consumer unless there had been an intelligent application of capital to its development and transportation. It has also been impressed that in a gas plant, more than in any other utility, there is a wide fluctuation between peaks and valleys of consumption due to varied daily and seasonal requirements. An efficient gas system must stand ready to serve the highest demands of severe weather, devoting to that service an investment in development and equipment much beyond that sufficient for the average load from which reliable income is derived.

If the plant were in constant use of its full capacity, the price to the consumer would be less, but the plant must be built to meet the severest requirements, even though much of this capacity may remain in costly idleness during a large portion of the year.

On the other hand, the Commission has had constantly in mind that a company enjoying the immunities of a public utility, has no right to impose upon the consumers a heavier burden than that which should be justly borne, and that will produce a proper rate of return, considering the value of

the property devoted to this public service and to the risks involved.

[fol. 201] Valuations

As the case was developed the valuations and the rate of return fall naturally into three divisions: (1) The valuation of the property and the rate of return of The United Fuel Gas Company, (2) The Ohio Fuel Gas Company, (3) The Columbus Gas & Fuel Company.

The United Fuel Gas Company

This company and its affiliated companies produce and transport natural gas in the states of West Virginia and Kentucky and The Ohio Fuel Gas Company purchases a portion of this gas at the Ohio River. As occurs in all cases where there is a contest as to the rate, there is a great divergence between the engineers supporting either side as to the proper value to be placed upon the company involved. In this case the company values the United Fuel property involved in the production of gas, a portion of which reaches the gateway at Columbus, at $55,165,781.00. The city values the same property at $44,344,787.00. Between these figures lies a true valuation and the Commission must endeavor to search this out from the mass of conflicting testimony.

For several years there has been pending in the state of West Virginia a gas rate case involving the property located in West Virginia and this testimony was offered en masse to this Commission as the evidence bearing upon the valuation of this property. The West Virginia Commission had arrived at a certain valuation and decided upon a certain rate, which upon review by the Supreme Court of that state was reversed and the West Virginia Commission again sought to re-value the property in accordance with the instruction of the Supreme Court. In [fol. 202] this task they have so far failed, in that no two of the Commissioners of that State can agree upon the proper rate, but during the pendency of further proceedings they have agreed upon a temporary rate for domestic and wholesale consumption.

Valuation of West Virginia Property.

The entire Commission is in agreement upon the value of the property used and useful devoted to the service of

other than domestic and manufacturing customers in West Virginia, exclusive of the distribution system property and the proportion of the general property applicable thereto as of December 31, 1929, finding the same to be $37,422,-112.00. This corresponds to the total valuation asserted by the city of $44,344,787.00, being the sum of $11,000,-000.00 less than the value claimed by the company as shown in Company's Exhibit No. 80, page 3. Of this property a certain proportion is allocable to The Ohio Fuel Gas Company on the basis of M. C. F. sales to The Ohio Fuel Gas Company during the year 1929, and the Commission has reached an unanimous conclusion as to this amount in the sum of $13,556,684.00.

Expenses and Return on Investment of West Virginia Property

The entire Commission is not in accord as to the proper method of treating the item of expenses attributable to the West Virginia operation, the difference arising from the difference in treatment of delayed rentals and depreciation and amortization. The majority of the Commission is of the view that as the evidence was presented in the case [fol. 203] before the West Virginia Commission, this Commission is bound by the treatment thereof by that Commission.

There was no segregation in the West Virginia case of producing and nonproducing acreage, the entire acreage held by the company being considered as a whole, and the majority therefore concluded that the question of delayed rentals, which will be treated more at length later in this opinion, does not arise in the West Virginia case.

The West Virginia Commission treated the question of depreciation and amortization by allowing a certain per cent for each of these items, to-wit, 1.12% for depreciation and 4.15% for amortization, such per cents being estimated upon the property subject to these items. This method of computation was endorsed by the Supreme Court of West Virginia. On all other items of expense for the operation of The United Fuel Company the Commission is in harmony.

Treating the expense items as the same were treated by the West Virginia Commission, we arrive at a total expense based upon the sale of gas to The Ohio Fuel Gas

Company of $3,413,632.00, which, being properly apportioned to the M. C. F. of the gas sold at the river to The Ohio Fuel Gas Company gives a value to such gas of 22.04 cents. This amount is in close harmony with the temporary rate of 22.5 cents fixed by the West Virginia Commission to be charged to those consuming in excess of 600,000 cubic feet per month. In other words, the rate fixed for the large users of gas in West Virginia is almost identical with what we have estimated to be the proper river rate to be charged by the West Virginia company to The Ohio Fuel Gas Company. While this amount is 4.25 cents more than the price that would have resulted had delayed [fol. 204] rentals been excluded and had a flat rate of 2½% for depreciation and amortization been used instead of the figures used for those items by the West Virginia Commission, yet this difference increases the Columbus gate rate only one cent due to the fact that the gas purchased from West Virginia is commingled with gas purchased and produced by The Ohio Fuel Gas Company at a less cost than the river rate. The Commission allows 22 cents as a proper expense to The Ohio Fuel Gas Company for gas purchased by it at the river.

Should the question be asked why we allowed the company a larger sum for gas purchased in West Virginia than gas that might be produced in a sufficient quantity at a less rate in Ohio, the answer is that the West Virginia gas is an emergency gas and that the company will avail itself of cheaper gas wherever and whenever possible.

The Ohio Fuel Gas Company

The next step in our examination is The Ohio Fuel Gas Company, operating throughout the Ohio territory and furnishing gas of its own production together with purchased gas to the ultimate consumer either directly in some municipalities or through the instrumentality of the related public utility in other municipalities, the latter being the case in Columbus. At the outset of our investigation we found a wide divergence in the estimation of the value of the property by the company and by the city, the company estimating the value of The Ohio Fuel at $140,364,827.00, while the city fixes a valuation of $68,518,245.00 for the entire property, only a portion of which is allocated to the

gateway of Columbus. At the outset of our examination certain paramount questions present themselves:

[fol. 205] 1. The proper valuation of gas lands.

2. Whether or not delayed rentals for non-productive lands shall be considered as an item of expense.

3. Proper amount to be allowed for:

a. Depreciation.

b. Amortization of gas lands and equipment connected therewith.

There are of course certain other questions of a general nature which affect the valuation of the property used and useful and the proper amount to be allowed for the expense of conducting the business.

Valuation of Gas Land

Large gas companies, and especially the one now under consideration, have pursued the policy of acquiring, under lease, not only gas lands which have been tested and are known to be gas producing, but also other lands adjacent thereto, which from a geological study and their proximity to tested lands give promise of supplying a reservoir from which gas may be drawn through a long period of years.

That portion of the gas lands which are in actual production are designated in this cae as "operated acreage;" while that portion still undrilled is known as "unoperated acreage."

In the case of the Logan Gas Company v. The Public Utilities Commission of Ohio, 121 O. S., 507, what is now known as the operated acreage was there designated "Class number 1," while the unoperated acreage was designated as "classes number 2, 3 and 4" depending on the relative likelihood of each such class becoming producing acreage. In [fol. 206] the case in question it was held by the Supreme Court in a somewhat divided opinion that neither class number 2, 3 or 4 should be considered in fixing the valuation of the property that was then used and useful. The Commission has determined that the acreage at present used and useful by The Ohio Fuel Company in producing gas, a part of which reaches the Columbus gateway is 291,396 acres.

This productive acreage is arrived at by considering all evidence touching the amount in operation including an estimate made by considering the average number of acres put in operation by the drilling of a single well, it being asserted that from 75 to 80 acres are so put in operation. We have allowed 79.7 acres per well, there being on June 1, 1929, 3,657 productive wells. In addition to the 291,396 acres now in production the company has under lease 2,542,791 unoperated acres, which it values at $24,752,000.00. Having determined the number of acres that are in operation and are therefore used and useful, the difficult question remains as to their present value. Manifestly the present value depends upon the quantity of gas below the surface, and as gas is withdrawn, the acreage becomes less valuable in proportion that the withdrawn gas bears to the gas still to be captured.

Witnesses have been produced by the company who have testified that productive acreage is worth in the market all the way from $39.34 to $100.00 per acre. And they have also testified that there have recently been within reasonably close territory actual sales of acreage at a definite valuation. We are at once confronted with the question of the probative value of evidence touching the market [fol. 207] value. Such evidence *evidence* could not be based upon the price between a willing buyer and a willing seller. In the very nature of the operation, companies have a monopoly within their own field, and further the value of the land in the market would depend upon the price which the regulated company may be permitted to charge to its customers. A market price could not be fixed where the value would be dependent upon the rate which could be charged when that rate is within the control of a regulatory body and should depend upon the value of the land. To say that the value of the land is to be determined by the rate at which the gas may be sold, and that the rate for which the gas may be sold depends upon the value of the land is reasoning in a circle, and such testimony can be of but little value.

This whole matter is discussed at length in The Logan Gas Company et al. v. Public Utilities Commission of Ohio, 124 O. S., 248, and an interesting discussion will also be found in the case of The United Fuel Gas Company v. Railroad Commission of Kentucky, 278 U. S., 300; (72 L. Ed., 390). The

great divergence of judgment as to the value of leasehold property under operation is evidenced by the fact that the city's estimate is $1,569,479.00 while that claimed by the company is $19,252,000.00. The Supreme Court in the Logan case above referred to sustained the Commission in fixing the value of the Logan property, which is now a part of The Ohio Fuel Property, at $25.00 per acre, which value was arrived at by the Commission in that case (124 O. S., 248) under mandate from the Supreme Court in the first Logan case, 121 O. S., 507. The Commission, on full consideration of all the evidence offered touching the value of [fol. 208] the gas acreage in active operation, and giving consideration to its enhanced value due to delayed rentals which the company paid before such acreage came into the classification of "used and useful," fixes the value at $25.00 per acre. This valuation is approximately $2,500,000.00 more than the present book value. The proper estimate of the value of productive acreage is one of the most difficult presented to the Commission, as it is impossible to estimate the gas content of any acreage or the life of its productivity. Some witnesses in arriving at the value for the gas producing lands gave consideration to the fact that they were grouped together in one holding and were thus in the nature of a monopoly. We are not inclined to give much weight to that element of value, especially in consideration of the provision of Section 614-46:

"And exclusive of any value added thereto by reason of a monopoly or merger."

The entire Commission is in harmony in fixing this value for the productive acreage at $7,284,900.00.

Delayed Rentals

The next question of major importance is what treatment shall be given to the delayed rentals paid by the Company for the unoperated acreage which in its judgment it is necessary for it to place under lease to protect its property and provide reasonable security for a future continuous supply of gas.

It might well be argued that inasmuch as the Supreme Court of Ohio in the Logan Gas case, 121 O. S., 507, has definitely held that acreage, not now in operation could not be considered in fixing the valuation of the property "used and

[fol. 209] useful", that it would follow logically that the cost of controlling this property during its period of nonproductivity should not be placed upon the present rate payer.

It is urged by the company that a wise business policy dictates that future requirements must be provided for to justify the expenditure of large sums of money in transportation and distribution facilities. It is insisted that the control of large reservors of gas for future use is the very foundation of the stability of the company and that without such reserve the company could not in justice to itself spend the sums necessary for transmission lines and for ditribution within municipalities. It is insisted that it would be the height of folly to venture large sums which would be lost to the company if it were deprived of the back-log of gas reserves, and it is pointed out unless the company secure to itself these gas lands for future development, a rival company might come into the field and lease the lands placing the present company at the mercy of its rival, when it has exhausted the gas beneath what is now designated as productive acreage."

It is insisted that while the Supreme Court in the Logan Gas case above referred to decided that unproductive lands could not be considered in fixing the base valuation, yet the question was not squarely placed before it as to whether or not the expense of carrying this acreage was a proper maintenance charge to be paid out of the income of the company, to be charged against the present rate payer.

It must be admitted that there is much force in the contention of the company. On the other hand it is urged that the present rate payer should not be penalized by a higher rate [fol. 210] to take care of the future rate payer. It is urged that, if the company as a matter of policy, decides to secure to itself gas reserves which are not at present used and useful that that is no concern of the present rate payer who is obliged to pay only a proper return upon the property used and useful.

The Commission is of the opinion that inasmuch as the Supreme Court has held that the nonproductive acreage may not be considered in fixing the rate base, it must logically follow that the expense of carrying that nonproductive acreage may not be considered as a part of the maintenance of

the system which has at its command other acreage which is actually producing gas and is therefore used and useful. The Commission is in harmony in disallowing as an expense of the company delayed rentals, but is of the view that when this nonproductive acreage is brought into production that the cost incurred in carrying it through its nonproductive period may then well go into its valuation, and be capitalized.

[fol. 211] Depreciation and Amortization

The proper treatment of this charge against the income of the company presents a most difficult question which can not be determined with mathematical precision but must finally rest upon sound judgment guided by such information as may be gleaned from the record. Depreciation proper concerns the life of the plant as affected by agencies which, operating usually through a period of years, will ultimately reach a point requiring the replacement of the plant or certain parts thereof. Section 499-8, G. C., relating to the valuation of property to determine a just rate, provides:

"Depreciation, if any, from the new reproductive cost as of a date certain for existing mechanical deterioration, for age, for obsolescence, for lack of utility or for any other cause, * * *"

Section 614-49 relating to a depreciation account, provides:

"The charge for depreciation shall be such as will provide the amount required over and above the cost and expense of maintenance to keep the property of the public utility in a state of efficiency corresponding to the progress of the art or industry."

Section 614-46, under which this case is being tried, provides that a fair price shall be fixed with due regard

"to the necessity of making reservations from the income for surplus, depreciation and contingencies * * *."

Depreciation correctly applied would affect only the mechanical parts of the property as indicated by these statutes and is ordinarily ascertained either by observation or esti-

mate, based upon the life of the property under investigation.

[fol. 212] Considering the mechanical parts of the property it is quite apparent that no fixed per cent. of depreciation could be made to apply indiscriminately to all of the property involved in this case for the reason that the elements involved in depreciation do not act uniformly upon all classes of property. There is some upon which there is no depreciation. Another portion of the plant may consist of pipes laid within territory subject to electrolysis, acidity of soil, vibration of heavy vehicles, corrosion, damage arising from street repairs and from contact with underground equipment of other utilities. These elements existing in a city are not present to the same extent in rural territory where pipes pass through virgin soil over rights of way not subject to the deteriorating influence incident to a city plant. A long gas line used for the purpose of transporting gas is subject to a few influences causing depreciation. There is, however, certain of the equipment of a gathering and transmission plant subject to heavy depreciation which would involve the working parts of high powered engines and compressing machinery used for the gathering and propulsion of gas through long transmission lines. It will thus be seen how difficult it is to ascertain a just flat rate for depreciation of the physical property of a plant so extensive as the one under consideration.

Amortization

In addition to the physical depreciation of the property we have also the difficult question of an amount proper to allow for depletion of the gas-bearing lands. When a well is drilled which produces gas it requires expensive equip-
[fol. 213] ment, including casing and other apparatus incident to its effective operation. Each well must be attached to a gathering line, often of considerable length, through which the gas passes to the transmission line.

The average life of gas-bearing lands in Ohio is seven and one-half years, and as gas ceases to flow from any well in paying quantity, the land, the well, its equipment become almost valueless. The hole in the ground of course is a total loss as is the acreage it was designed to drain. The casing can be pulled for use at other points but the expense incident thereto makes it of little value. It may well be that

the compressing stations and transmission lines will become useless as a field is exhausted although we are of the opinion that transmission lines will be useful for many years beyond the period in which any particular gas producing land becomes valueless through depletion.

While there is no statutory provision covering the item of depletion, yet it is apparent that it should be treated substantially in the same manner as depreciation defined by the statute, and we may designate it rather inaccurately "amortization."

There has been a long line of decisions touching the question of reserve for depreciation and how the same should be treated.

For some time the controversy centered about the question as to the consideration to be given to a reserve for depreciation which was either greater or less than that actually required. It was claimed on the one hand that such excessive reserve belonged to the rate-payer or that at least [fol. 214] he should receive the benefit of the same in fixing a just rate; and on the other hand it was claimed by the company if the reserve was not sufficient that that fact should redound to its benefit. It, however, has been definitely established that if the amount paid by the rate-payer is in excess of that required by the company, the excess belongs to the company, and that if the payment has been less than the requirements of the company, the company must bear the loss. The law does not require the company to give up for the benefit of future subscribers any part of its accumulations from a past operation. Neither can the company claim that past losses may be used to support a claim that rates for the future should be increased.

While these are established principles, there is, a definite relation between past accumulations from reserves and proper allowance for the future. In the case of Smith v. The Bell Telephone Company, 282 U. S., 133 (75 L. Ed., 255) it was held:

"10. The allowance for depreciation entering into the ascertainment of the rate base of a public utility may be based upon past experience, and should not be continued if shown by such experience to be excessive.

"11. Results shown under comparable conditions by other utility companies similarly situated, together with

past experience of the company in question, should afford a sound basis for judgment as to the amount which should be allowed as an annual charge for depreciation in fixing a rate base."

Chief Justice Hughes, in delivering the opinion of the Court, said:

"While it has been held by this Court that property paid for out of the moneys received for past services belongs to the company, and that the property represented by the credit balance in the reserve for depreciation can not be [fol. 215] used to support the imposition of a confiscatory rate, it is evident that past experience is an indication of the company's requirements for the future. The recognition of the ownership of the property represented by the reserve does not make it necessary to allow similar accumulations to go on if experience shows that these are excessive. The experience of the company • • • should afford a sound basis for judgment as to the amount which in fairness both to the public and the private interest should be allowed as an annual charge for depreciation."

The books and accounts of the company disclose that over a period of years the company has kept records in which it sets up the book value of its property; the amount reserved for depreciation, and the amount reserved for amortization. The books carried a credit balance at the end of 1923 of $917,177.00 for depreciation, and, on the same date $623,892.00 for amortization. These reserves have been built up through the intervening years until the 31st of December, 1930, when the depreciation reserve amounted to $18,947,910.00, and the amortization to $2,037,862.00, a total for the two items of $20,985,772.00. These figures include the years immediately proceding the filing of the complaint now under investigation and one year subsequent thereto. They may be taken as a fair estimate by the company of the two items as disclosed by their books. The figures include the reserve for the distribution system, but do not definitely state what portion of the depreciation and amortization items are applicable to distribution property, which should of course be excluded except that property allocated to the distribution system in Columbus. A close examination of the property of the company which is

devoted to distribution and to which the two reserves should not apply, leads to the conclusion that there should be de-
[fol. 216] ducted 16% of the entire depreciation reserve, leaving a balance of approximately $16,000,000.00 as a book reserve for depreciable property exclusive of the distribution system. We may assume that the company in setting up a reserve for amortization excluded property not affected by the elements that go to make up a proper amortization, and we therefore do not deduct the 16% representing the distribution system. This leaves a total of $17,985,300.00 as representing the two reserves for depreciation and amortization.

The book reserve necessarily involves some question of judgment exercised by the company over a period of years as to how much should be properly set aside for the two items. While the books disclose a reserve for the two items of $17,985,300.00, an estimate of these two items based upon reproduction value of the depreciable items, less observed depreciation, totals $26,000,000.00. The figures set up on the books of the company and that arrived at by theoretical reproduction and depreciation are based upon entirely different considerations which would make it impossible that the same figures could be reached by each method. The figures arrived at through appraisement as compared with those arrived at through an examination of the books show an excess of approximately $8,000,000.00 as disclosed by the appraisal which would indicate that the company has set up on its books a sum less than actual experience indicated should have been set up. One witness for the city allowed an annual reserve charge of 3.6% per year for both depreciation and amortization, and another witness, 2.25%. Counsel for the city say on page 346:

[fol. 217] "In the light of the experience of Ohio Fuel as shown by these figures, Blundon's total annual reserve charge of 3.6% per year amounting to $2,848,301.74 is a generous allowance."

And on page 345,

"In view of this experience of the Columbus company relative to depreciation reserve and depreciation charge the annual allowance for the purpose of this case can not in any event exceed Allensworth's 2.25 which would produce $97,533.50."

The Ohio Fuel Company under its set-up claims an annual depreciation allowance of $1,420,241.00 and for amortization an annual allowance of $5,449,221.00, a total annual charge of $6,869,462.00. The question of depreciation as presented by each side to this controversy will be found in Company's brief, page 69, et seq., and in City's brief, page 342, et seq. As against the claims of each party the concurring commissioners, with the assistance of the Commission's engineers, have arrived at the conclusion that 1½% of the present value of the depreciable property, being all of the physical property with the exception of lands and rights of way, would correctly represent the average amount that should be set aside for depreciation reserve. This amount produces $667,612.00. As to amortization we have considered the evidence disclosing that the average life of an Ohio well is seven and one-half years. The depreciation estimated from present rock pressure of each well discloses that there is at this time a depreciation of 58.1126%, leaving the present value of these items of 41.8874% of the original value of the leaseholds.

Considering the present condition of these wells the re- [fol. 218] maining life expectancy is an average of three years and two months. We have considered that accounts 211, gas well construction, and 212, gas well equipment and leaseholds, are all subject to the proper amortization for the reasons already set forth. Considering the present value of the three items in reference to the remaining life expectancy we find that the annual amortization should be $4,158,954.00. The two items of depreciation and amortization amount annually to $4,826,566.00.

These allowances should be devoted to the purposes of depreciation and amortization alone and if necessary to be invested they should be invested in compliance with the statute and must not be devoted to any other purpose or used for paying dividends. If they are so conserved and used they will afford a fund from which the company may from time to time draw funds sufficient to keep the plant in effective operation. If the funds should be appropriated to other purposes, the time might well arrive when the company may not have available, and may not be able to obtain the necessary capital to restore depleted property.

[fol. 219] Going Concern Value

One of the lesser questions relates to going concern value asserted by the Company and set up in the valuation of its property. We speak of this as one of the lesser questions because it seems to us it has been so frequently discussed that a detailed examination is now uncalled for. However, the Commission was confronted with an array of witnesses testifying to the fact that there was a value inherent in each of these companies under investigation designated as going concern value and variously estimated at from 10 to 15 per cent of the physical value of the several properties. The witnesses as to this elusive element of value had each a separate formula by which he estimated the amount that should be added to the physical valuation of the property as "going concern value." Broadly it may be said that they asserted that in order to convert the bare bones of the physical property into a revenue producing entity it was necessary to attach the rate payer, which necessitated the training of an efficient personnel, the seasoning of the pipe lines, and the general promotion of the business which finally resulted in a revenue producing property.

It was also asserted that it was necessary to overbuild the property and that until the requisite number of consumers were attached there was a loss to the company which should be covered by an allowance of a per cent. for going concern. This value was generally placed at 10 per cent. of the physical property. One witness arrived at this [fol. 220] value by giving consideration to the value placed by insurance companies upon the lives of executives of corporations seeking insurance. One witness finally summed up the matter by stating that if there were fifty engineers giving testimony as to the foundation for going concern value there would be fifty different answers. It is quite manifest that the many reasons given by the experts as to why a going concern value should be added to the physical value of the property within the City of Columbus does not obtain as to the production and transmission system, as each of these was built for the definite purpose of supplying customers already secured and we feel that there is no justification for adding going concern value to the production and transmission system. As we have before

had occasion to state, if there was any definite cost to the Company in doing those things which are so ingeniously developed as being the possible element of cost in the reproduction of the property, we would be inclined to allow them as a proper element of value, but we are not impressed with the fact that a going concern value amounting in the aggregate to millions of dollars can be built up on a theory that expenses are to be incurred after the property has been reproduced which were not, as a matter of fact, incurred in the original construction of the property. We cannot conceive that there would be any expense of attaching business to a producing pipe line company which has been built for the sole purpose of supplying already existing customers, nor are we impressed with the cost [fol. 221] incident to training personnel, as the business of producing, transporting and distributing gas has been so long in operation that an abundant supply of well trained personnel is always at the command of the Company and in those times there is probably a considerable over-supply.

It may be quite true that after a considerable number of consumers have been attached to a distribution line that certain costs would be incurred in attaching a small group which had not been persuaded of the convenience and advantage of a gas service. It may be noted in passing that it was necessary to compel the Company by mandatory injunction to extend service to a group which was not only willing but anxious to become customers of the Company.

While we are still discussing the property of The Ohio Fuel Gas Company all that we say here is equally applicable to The United Company and to The Columbus Gas & Fuel Company, the distributing Company.

The Supreme Court of Ohio has frequently sustained the Commission in its disallowance of going concern value. See Cleveland Illuminating Company vs. Public Utilities, 98 O. S. 462; Cincinnati Gas & Electric Company vs. Public Utilities, 96 O. S., 554; Lima Telephone Company vs. Publice Utilities Commission, 98 O. S., 110; Cincinnati vs. Public Utilities Commission, 113 O. S., 259; Hardin-Wyan- [fol. 222] dotte Lighting Company vs. Public Utilities Commission, 118 O. S., 592, and other cases not necessary to cite.

Pipe Line Prices

Another rather minor difference between the estimate of the Company and that of the City arose from a different treatment of prices of pipe, the City's witness testifying to a price less than that asserted by the Company. We have gone into this matter in detail and find that the City's testimony upon this point is not as trustworthy as that produced by the Company as there are several manifest errors in the City's estimate, among which might be noted the fact that the City's witness adopted the pipe prices used by the Company's engineers in The United Fuel case as of December 31, 1928, and applied them to the construction of The Ohio Fuel Company as of December 31, 1929, when pipe prices were higher on the open market. He also priced a character of pipe that was not, as a matter of fact, used in The Ohio Fuel Company construction, using a pipe of less tensile strength and of less cost. The Commission is in harmony upon this point.

There are a number of other minor differences between the Company and the City in the cost of construction of The Ohio Fuel Company property including the production and transmission system. These differences which produce rather large figures when considering the entire system are minimized when it is realized that only 11.1147 per cent. of the entire property is allocated to the Columbus gate rate.

[fol. 223] The Cost of Financing

Another point of difference between the Company and the City is whether or not the Commission should allow as part of the base rate the cost of financing, the contention being centered upon the question as to what should be regarded as the cost of financing and what as a discount upon securities sold. The Statutes of Ohio do not contemplate the cost of gathering together the money necessary to construct the public utility. When the Commission is directed to ascertain the cost of building a given plant the Statute has reference to the actual money to be expended for that purpose and does not contemplate that there should be an allowance for gathering together the money.

The Commission has also excluded the value of certain work in progress and property not used and useful.

General Overheads

This item of expenditure calls for the exercise of judgment and cannot be based on any definite figures and has produced a wide variance between the engineers for the Company and those for the City. Without going into detail it may be stated that Ford, Bacon and Davis, the engineers for the Company, have set up an average general overhead of 21 per cent., using 7 per cent. interest during construction. We are unable to agree with this estimate of [fol. 224] general overhead but have adopted as more reasonable 14 per cent. which covers the items of engineering and administrative expense during construction, law expense, interest during construction and omissions and contingencies. We feel that the per cent. that we have allowed is ample to cover these items.

Working Capital Including Material and Supplies

Another item in which there is a considerable difference in judgment is the amount necessary for working capital, including material and supplies. The Company asserts that this amount should be $3,700,000.00 while the City claims $1,500,000.00, in spite of the fact that its own witness Blundon has adopted the working capital figure of the Company, to-wit, $3,700,000.00. The Company bases its estimate (Exhibit 45, page 26) upon what it claims as the amounts shown on the books for material and supplies on hand as of December 31, 1929, and a reasonable allowance for cash in the bank together with an amount sufficient to provide for approximately two months average operating expense and the average cost of gas purchased in one month. We are inclined to the view that neither figure is correct. Analyzing the Company's claim we would eliminate the amount shown by the books for the material and supplies on hand but which are to be used for distribution plants and not for replacements on either the production or transmission lines. Manifestly it would be improper to allow them working capital to cover distribution systems in which the City of Columbus has no concern. We feel [fol. 225] that the amount of cash necessary should be limited to one and a half months rather than two and that the cost of gas purchased from The United Fuel Company should also be eliminated. Making these deductions we

have arrived at the figure of $2,690,132.00 as the proper working capital including material and supplies on hand, 11.1147 per cent. of which is allocated to Columbus.

[fol. 226] Allocation at the Columbus Gate

Having determined the value of The Ohio Fuel Company and The United Fuel Company, an important question arises as to the proper allocation to the gateway of Columbus of the property used and useful in distributing gas over the entire system of these two companies. As to The United Fuel Gas Company, we have allocated all that portion of the property that is devoted to the uses of Ohio and Kentucky and have established the gate rate based upon the portion of the gas that flows through the gateway at the river into the pipe of The Ohio Fuel Gas Company to be distributed over the State of Ohio. The Ohio Fuel Company has a widely extended producing and gathering system throughout the State, being active in every well defined gas belt. Collecting gas as it does in every remote portion of the State the same is conducted through distribution pipes and serves many municipalities either directly or through its affiliated distributing companies. In some cases The Ohio Fuel Gas Company sells its gas at a contract rate to non-affiliated companies.

At first blush one might say that the City of Columbus was not concerned with any other property of The Ohio Fuel Company than that which directly served it and that in computing the value of the property devoted to its service there must be excluded all other producing and transporting lines within the state which cannot be directly linked with it.

The evidence clearly established that the system operated by The Ohio Fuel Company is built upon the plan that gas [fol. 227] wherever produced is subject to be distributed to any point in the state where it may be required. Gas from the northern part of the state may be consumed in the southern and gas from West Virginia may be distributed to any of the numerous gateways in Ohio. So it is with gas purchased by the Company. The difficulty that confronted the Commission was to ascertain by some reliable evidence how much property was actually devoted to the service of Columbus. Owing to the method of conducting the enterprise it is absolutely impossible to say

that one pipe line or one well may be devoted to Columbus and that another pipe line or well may not be. As a matter of fact, gas is produced or purchased wherever available and transported in a system of interlocking pipe lines to the point of consumption and it may be broadly said that the entire system within the State of Ohio has, at some time and to some extent been devoted to the service of every municipality served by the Company.

Two methods of solution were suggested; the City contends that production property should be allocated upon the basis of sales but that the transmission property should be allocated to the particular market upon a basis of mileage, but dependent upon peak demands of any locality served. The Company, on the other hand, contends that there can be no definite allocation of either the production or transmission property to any one consuming district upon any other basis than that of the gas consumed in that particular locality. Testing out the two theories it soon developed that the contention advocated by the City [fol. 228] would result in highly different gate rates to communities which might be in close proximity. If the allocation of the property is measured by the gas consumed all communities bear an equal burden of a gateway price and there can be reasonable harmony as to the gateways of the several cities. Economically considered, we are of opinion that a substantially similar gateway price in each community would work to the welfare of our state rather than having one city which might enjoy a comparatively low rate while some other city might bear a high rate. This difference in gas rates between different cities might result in an unjust preference to the manufacturer and to the home owner in one city over those in another. Aside from this economic situation, it is practically impossible to allocate to the gateway of Columbus property used and useful for furnishing gas in any other method than that suggested by the Company.

The cities of Ohio should be permitted to use the entire system at substantially the same gate rate. What it may cost to distribute the gas within a given municipality after it passes the gateway is a local matter and may vary somewhat in each municipality. We have, therefore, unanimously reached the conclusion that producing and trans- [fol. 229] mission properties should be allocated to the

gateway of Columbus in proportion to the gas consumed by Columbus bears to the entire volume of gas produced throughout the system. It is estimated that the gas consumed in Columbus is 11.1147 per cent. of all the gas produced within the territory under examination and the allocation of the expenses will be in accordance with this judgment.

The Columbia Engineering and Management Corporation

As heretofore stated in our opinion, we desire to make a brief reference to The Columbia Engineering and Management Corporation which was organized for the purpose of furnishing managerial and engineering service to the various companies associated with and subsidiary to The Columbus Gas and Fuel Corporation. This corporation entered into two contracts with each related company, one for executive management, for which a charge of 2 per cent. to 2½ per cent. of the gross earnings of the Company plus traveling and incidental expenses was made. In addition to the managerial contract there was one for engineering services in connection with the operation and development of the several companies for which a separate charge was made for the salary to the engineers. The per cent. charge was made on the gross earnings of the several companies as its gas passed from one company to another or to the consumer. The development of this company, out of the surplus, from one having a capital of $100,000.00 to one having a capital of $1,000,000.00 was rapid and dividends were paid which were exorbitant when compared to [fol. 230] the capital actually paid in. There is attached to this Company a considerable group of executives of high standing in the gas industry to whom salaries were paid entirely out of harmony with the services that they could possibly have rendered and out of harmony with decreased income of the present time. We feel that the operation of such a Company and its use in drawing from the Company large sums of money is entirely discredited and should no longer be practiced.

We are of opinion that the managerial contract by which this Company drew from each of the several companies a per cent. of their gross earnings upon the sale from one to the other and finally to the consumer of the same gas imposes an unjustified burden upon the ultimate consumer.

We have corrected this claim for expenses, allowing only that which we think would justly pay for the services actually rendered.

The Rate of Return

Another important matter that confronts us is what is the proper rate of return to be allowed to the Gas Company after it has applied a portion of its income to the various expenses that have been allowed by the Commission. The standard and long followed rule is announced by the Supreme Court in the case of Bluefield Waterworks and Improvement vs. Public Service Commission of West Virginia, 262 U. S. 679; 67 Law Ed. 1176:

"5. A public utility is entitled to such rates as will permit it to earn a return upon the value of the property which it employs for the convenience of the public equal to that generally being made at the same time and in the same [fol. 231] general part of the country on investments in other business undertakings which are attended by corresponding risks and uncertainties, but it has no constitutional right to profits such as are realized or anticipated in highly profitable enterprises or speculative ventures.

6. The return on investment which a public utility should be permitted to earn should be reasonably sufficient to assure confidence in the financial soundness of the utility, and should be adequate, under efficient and economical management, to maintain and support its credit and enable it to raise money necessary for the proper discharge of its public duties.

7. Six per cent. is too low to constitute just compensation * * *"

This puts up to the Commission a test which, under the present depression, is different from any that has heretofore confronted us. In prosperous times 7 and 8 per cent. and even more were allowed. A gas company is a more hazardous undertaking than is a water company or power company because its whole existence depends upon the continuance of the gas supply and therefore it might be justly said that such a company would be entitled to a greater rate because of the greater risk involved.

However, gas seems now to be such an assured product that for the purpose of the present consideration it may be regarded almost as reliable as a water supply. The test of "equal to that generally being made at the same time and in the same general part of the country on investments in other business undertakings" presents a new question on account of the present depression. Many other business undertakings at this time in this community are making [fol. 232] nothing, but it would be manifestly unlawful for us to say that, due to this fact, this business should be required to serve without a fair return. Giving the matter our serious consideration we have determined that a present rate of income of 6½% per cent. should be allowed to each of the three companies involved and that their legitimate expenses should be computed on that basis.

There are quite a number of other minor matters upon which there has been a difference between the Company and the City but their effect upon the City rate is so inconsequential that we will not take space to note them but they will be reflected in the Exhibits attached hereto and made a part of this report.

Taking into consideration all the elements and figures to which we have called attention, we find that the proper gate rate for the City of Columbus is 39.02 cents which we fix for the purpose of the gateway at 39 cents.

The Columbus Gas and Fuel Company Retail Rate

As in the case of the other Companies, there is a wide divergence between the claim of the Company and the claim of the City. The Company claims the value of the distribution plant within the city gates to be $5,364,599.00 while the City asserts that the value is $3,555,510.00. The distribution plant in Columbus, while extensive, is by no means comparable in value, for intricacy of pipe lines, with those that attach to the two producing and transportation Companies and most of our changes and eliminations in [fol. 233] reference to that Company will appear by an examination of the figures shown in the attached Exhibit.

Controversy between the Company and the City centered about the usual differences, among which were reconstruction cost, depreciation, present value, going concern value, overheads, cost of labor, construction expenditures, property "used and useful," concerning all of which our conclusions are reflected in the Exhibits.

It might, however, be stated briefly that the entire Commission is in substantial accord in accepting the material costs applied by the Company and the labor costs and labor performance set up by the City. We accept the Company's claim as to cost of meters and agree that the valuation placed upon the gas holder and the lands upon which it is situated should be eliminated for the reason that this holder, originally designed to furnish pressure for the distribution of artificial gas has been infrequently used in the course of the years it has been attached to the natural gas mains and that if a natural gas distribution system would be reproduced the holder would have no place in the distribution of gas which comes to the gate at a pressure higher than can be furnished by the holder and that the contents of this holder, if called upon to furnish an emergency supply, would be inconsequential; as a storage tank it is useless and as a stabilizer it has no value and as a pressure producer it is without effect. It is manifest that as far as the distribution of natural gas in the city is concerned, it is a useless appendage and should be excluded from the valuation.

[fol. 234] The value of general office equipment, with observed depreciation, will be accepted, as will the value fixed by the Company on general shop equipment and general garage equipment. Undistributed construction expenditures will be allowed in the sum of 12½% per cent. on the valuation found by the Commission of the physical property. Working capital will be allowed in the sum of $100,000.00. Going concern value will be disallowed. The condition of the property as testified to by the Company seems more accurate than that testified to by the City's witnesses.

The difficult questions of depletion of gas reserves which gave the Commission so much concern in the producing company do not arise in the case of the distribution plant within the City gates and we will allow 1½ per cent. on the value of the Columbus property excluding lands, working capital, material and supplies and garage equipment for depreciation.

The abandonment of certain lines by the Company have been given proper consideration and asserted expense for clamps has been disallowed on the theory that this is a

capital expense and has heretofore been included in the rate base. Certain expenses for business promotion have been set up. We feel that these were unjustified and should be disallowed as the evidence tends to show that such expense arose in the sale of merchandise which the Company sought to install for the purpose of promoting the sale of gas. Other inclusions and exclusions will appear from the Exhibits, a part of which is for certain business promotion conceded by the city.

[fol. 235] Rate Case Expense

It has been the custom to allow rate case expense to companies where the rate which is attached is found to be insufficient. We have found the rate in this case insufficient, but the company has set up in evidence a claim for approximately $50,000.00 for rate case expense in the case pending in the Federal Court, which is not concerned with the case now under investigation.

No evidence has been introduced tending to show the cost of the rate case to the company in this particular case, and we, therefore, have no means of determining what it should be, if we were inclined to allow it.

However, irrespective of the fact that no evidence has been produced tending to show the cost of such proceeding, we are clear that in this case it should not be allowed in any sum for the reason that this case has gone far afield in proving valuations that may affect many other gate cases and we do not believe that the consumers in Columbus should be taxed with this cost.

Furthermore, we are of the opinion that the rate allowed is sufficient to absorb any rate case costs that may be properly attributable to Columbus. We, therefore, disallow any rate case expense.

Columbus Distributing Expense

Considering all the evidence, both as to the value of the property and the expense properly allowable for the conduct of the business within the Columbus gate, we have determined that the proper allowances to be made for the service rendered by The Columbus Gas and Fuel Company in the distribution of gas to the consumer in Columbus is 16¢ per thousand cubic feet.

[fol. 236] Adding this amount to the 39¢ that we have determined to be the proper gate rate, we find and determine the amount to be paid by the Columbus consumers is 55¢ per thousand cubic feet.

Distribution Rate

Having arrived at the base rate of 55 cents per thousand cubic feet it becomes a question as to the method which shall be followed which will result in this as an average. The Company has proposed the following rate:

Proposed Rate

$1.00 First 500 Cu. Ft. or less or none per month,
.07 Per 100 Cu. Ft. next 1,500 Cu. Ft. per month,
.06 Per 100 Cu. Ft. next 3,000 Cu. Ft. per month,
.055 Per 100 Cu. Ft. next 195,000 Cu. Ft. per month,
.05 Per 100 Cu. Ft. excess of 200,000 Cu. Ft. per month.

It will be observed that this rate is for units of 100 cubic feet and to make in comparable with the thousand cubic feet each amount must be multiplied by ten.

It can readily be perceived that this rate will make the price for the lower brackets of consumption higher than the base rate and that the final low rate of 50 cents per thousand will apply only to heavy consumers. The ordinance under review provides:

"75 cents as a minimum per month per customer from which there shall be no discount.
"48 cents for each thousand cubic feet * * * consumed through each meter each month."

The effect of this provision is that each customer shall pay a minimum of 75 cents per month, irrespective of the amount consumed, but when this minimum has been reached higher consumption would be at the base rate irrespective of the amount consumed.

[fol. 237] The reason advanced for a higher rate to the smaller brackets of consumption is that there are certain incidental overheads which should be charged to those whose consumption is small.

The block rates proposed by the Company would in practice result in a service charge although not so designated. There is, however, no proper objection to a reasonable minimum charge, and the Commission has concluded to follow the ordinance in fixing "75 cents as a minimum per month per customer from which there shall be no discount," and 55 cents for each thousand cubic feet consumed through each meter per month with the penalties provided in the ordinance.

Effect of New Rate

The consumers in Columbus are interested in knowing to what extent their bills may be increased under the rate now allowed by the Commission. There are a total of approximately 55,000 consumers in the city. Of these 6,000 use 1,400 cubic feet or less, and the new rate will impose no increase upon them. 4,000 use 2,000 cubic feet per month, and each of these will pay 14 cents per month increase.

6,000 will pay 21 cents increase; 6,500 will pay 28 cents increase; 6,000 will pay 35 cents increase; 5,000 will pay 42 cents increase; 4,000 will pay 49 cents increase; 3,000 will pay 56 cents increase; 2,000 will pay 63 cents increase; 2,000 will pay 70 cents increase; 1,500 will pay 77 cents increase; 1,000 will pay 84 cents increase; 1,000 will pay 91 cents increase; 800 will pay 98 cents increase; 600 will pay $1.05 increase; 500 will pay $1.12 increase; 400 will pay $1.19 increase; 400 will pay $1.26 increase; 300 will pay $1.33 increase; 300 will pay $1.40 increase; 1,000 will pay $1.54 increase; 1,500 will pay $2.94 increase; 500 will pay $5.74 in- [fol. 238] crease; 100 will pay $11.06 increase; 40 will pay $24.43 increase; 28 will pay $66.15 increase. See Company Exhibit 10, Page 17.

The average consumption per year of all the consumers in 1929 was 103,000 cubic feet. If the rate is increased 7 cents, the average increase will be $7.21 per year, or 60 cents per month. The first group of 22,700 customers will pay an average increase of 16 cents per month; 21,000 will pay an increase of 45 cents per month. Consolidating these two groups we find that 43,900 customers will pay an average increase of 31 cents per month. These 43,900 comprise practically 80% in numbers of the consuming public attached to the service of this company. The remaining 20% are confined to large consumers most of which are industrial, where

the Company is in competition with other sources of fuel.

It will thus be realized that a very slight increase in the rate charged to a large number of individual consumers will meet the increase we have found necessary to establish. [fol. 239] Columbus consumers have been enjoying one of the lowest rates in the State of Ohio. While the new rate makes a slight increase here, if the gate rate established in this proceeding becomes in a measure a standard for other gate rates other communities will enjoy a substantial decrease in the amount that they are now paying for gas.

Other Matters to Be Regarded

It will be observed that under the statute applicable to this case the Commission is given more discretion in correcting an ordinance rate than it can exercise under the more rigid rules provided by Section 499-8, et seq., controlling its consideration of cases not arising under ordinances. The statute under which we are now operating provides that the Commission in fixing a just rate shall have due regard to the value of all the property of the utility "used and useful" and to its necessity for making certain reservations. It also provides that it shall have regard for "such other matters as may be proper, according to the fact in each case."

While the Commission has arrived at its judgment as to what is a just rate by observing the more rigid rules provided by the statute, its conclusion that the ordinance rate should be advanced might well be justified by a proper regard of other matters incident to this case.

Prominent among these is the matter of service. We are convinced that a community is as much interested in efficient service as it is in a small advance in price. If the retention of the old 48 cent rate would require that the com- [fol. 240] pany curtail its present excellent service due to lack of sufficient funds the rate payer would be more dissatisfied than by the small increase which will enable the company to continue its present service.

Another matter that might well engage the consideration of the Commission is that the common stock of the holding company has been widely distributed to small investors, whose securities might be jeopardized if oppressive regulations were imposed upon the operating companies. The Commission in this case has eliminated obnoxiously exces-

sive profits going to small groups through the instrumentality of closely controlled corporations. While no doubt there are some high salaries paid to those connected with all the affiliated companies, yet the basic securities upon which the dividends are paid are distributed to a large number of investors in comparatively small blocks. These securities should not be jeopardized.

Control of Utilities

Commissions are established throughout the nation to control public utilities.

An unregulated or loosely regulated public utility, whose only thought is to secure as large an income from its patrons as the traffic will bear, may become a public menace.

A harshly regulated company, which is allowed only such income as will confine its activities to bare necessities will not be able to afford to the public the service and security [fol. 241] which it demands.

Unfair regulation may result in strangulation.

A wisely regulated utility can be made the efficient servant of the people, furnishing to them desirable commodities at a fair price both to the consumer and to the producer.

The producer naturally wants as large an income as possible and the consumer, as low a rate as possible.

Between the producer and consumer a regulatory body must stand prepared to say, after intelligent examination, to the producer that its rates are too high or to the consumer that he demands too low a rate. If an even balance can be maintained, justice will be done to all.

This has been the constant purpose of this Commission through a long and tedious trial, and with an earnest endeavor to arrive at a just conclusion.

Time Consumed

Necessarily the consideration of this case has consumed a longer period of time than would be required in a case of less importance. The several members of the Commission have, on first impression, reached different conclusions on many questions, some of which were of major importance, but many of which have slight effect upon the ultimate rate. The concurring members have felt that a duty was imposed on them to reconcile their divergent views wherever the

same could be done without a sacrifice of convictions that either may have held concerning fundamental principles. Had each adhered tenaciously to his individual opinion, the case would have resulted in three impotent opinions with no authority to the decision of the Commission.

[fol. 242] Necessarily the reconciliation of divergent views has consumed time, but we are of the firm belief that the decision arrived at is of far more value than one hastily concluded which would necessarily result in long delays in the reviewing court.

Trial of the Case

The extent and importance of this case, and the thoroughness with which it was tried, can be visualized, to some extent, when it is known that the evidence introduced, mostly by expert witnesses, covered over Eleven Thousand pages and the exhibits filed numbered more than Seven Hundred and Fifty, many of them complicated tables of figures and computations.

The briefs of counsel totaled one thousand printed pages, while the oral arguments, in addition, were numerous and comprehensive.

The case was tried most skillfully by expert attorneys, and every question involved was exhaustively discussed.

The Commission appreciates the sincerity, earnestness and patience of all counsel during the long trial of this case, and takes the opportunity to thank them for their co-operation in developing every phase of the problem.

Order may be drawn and issued according to this opinion.

The Public Utilities Commission of Ohio, E. J. Hopple, Chairman. Frank W. Geiger, Commissioner. Edward C. Turner, Albert M. Calland, L. K. Langdon, Chester J. Gorkin, Attorneys for The Columbus Gas & Fuel Co. John L. Davies, City Solicitor of Columbus, Ohio. James M. Butler, James W. Huffman, Attys. for the City of Columbus, Ohio.

Oct. 3, 1932.

[fol. 243] EXHIBIT "A"

The Columbus Gas & Fuel Company—Formal Case No. 6935

United Fuel Gas Company—River Rate

Valuation:

Property devoted to the service of other than Domestic and Manufacturing customers in West Virginia, exclusive of Distribution System property and the proportion of General Property applicable thereto, as of 12-31-29.			Portion allocable to Ohio Fuel Gas Company on M. C. F. Sales Basis
Production System:			
Land	1,234		447
Rights of Way	214,340		77,648
Plant & General Overheads	14,207,333		5,146,805
Total		14,422,907	5,224,900
Transmission System:			
Land	16,270		5,894
Rights of Way	294,725		106,768
Plant & General Overheads	14,206,244		5,146,411
Total		14,517,239	5,259,073
General Property:			
Land	145,205		52,603
Plant & General Overheads	538,635		195,128
Total		683,840	247,731
Total Physical Property		29,623,986	10,731,704
Leaseholds		6,796,213	2,462,023
Working Capital and Materials & Supplies		1,001,913	362,957
Total Property Used & Useful		37,422,112	13,556,684
Expenses and Return on Investment:			
Proportion applicable to the above property for 1929.			
Gas Purchased for Resale		1,520,431	550,798
Production Expense		1,678,480	608,053
Transmission Expense		942,507	341,436
General Expense		407,491	147,619
Taxes		893,788	323,787
Interdepartmental		*329,362	*119,316
Depreciation & Amortization		1,877,282	680,071
Return @ 6½%		2,432,437	881,184
Total Expenses & Return		9,423,054	3,413,632
M. C. F. of Gas Sold:			
Proportion applicable to the above property for 1929.			
Wholesale Sales		39,536,161	15,486,218
Retail Sales—Ohio	1,352,473		
Retail Sales—Kentucky	1,859,807	3,212,280	.....
Total M. C. F. of Gas Sold		42,748,441	15,486,218
River Rate per M. C. F.:			
Derived by dividing the Total Expenses & Return by the Total M. C. F. of Gas Sold		22.04¢	22.04¢

* (In Red.)

[fol. 244] EXHIBIT "B"

The Columbus Gas & Fuel Company—Formal Case No. 5935

The Ohio Fuel Gas Company—Gate Rate

Sheet 1

Valuation:		
Property devoted to the service of Columbus, Ohio, and other cities in Ohio and Indiana, exclusive of Distribution System property and the proportion of General Property applicable thereto, as of 12-31-29.		Portion Applicable to Cols. Gas & Fuel Co. on M. C. F. Sales Basis
Production System	13,140,755	1,460,659
Transmission System	42,404,329	4,713,123
General Property	1,089,344	121,078
General Overheads	7,928,820	881,266
Total Physical Property	64,563,248	7,176,026
Leaseholds	7,284,900	809,696
Working Capital and Materials & Supplies	2,690,132	299,001
Total Property Used & Useful	74,538,280A	8,284,723
Expenses and Return on Investment:		
Proportion applicable to above Property for 1929.		
Purchased Gas—from U. F. G. Co. @ 22.04¢ per M. C. F.	3,413,162	379,363
Purchased Gas—from Others	2,873,056	319,332
Purchased Gas Expense	89,747	9,975
Production Expenses	1,288,588B	143,223
Non-Productive Well Drilling Expenses	618,789	68,777
Transmission Expenses	1,401,668B	155,792
General Administrative Expenses	391,979B	43,567
Other General Expenses	199,347B	22,157
Taxes	1,742,310B	193,653
Credits	782,358*	86,957*
Depreciation & Amortization	4,826,566	536,459
Return @ 6½%	4,844,988	538,507
Total Expenses & Return	20,907,842	2,323,848
M. C. F. of Gas Sold:		
Proportion applicable to the above property for 1929	53,579,575	5,955,221
Gate Rate per M. C. F.:		
Derived by dividing the Total Expenses and Return by the Total M. C. F. of Gas Sold	39.02¢	39.02¢

NOTE:

A—Detail of Valuation shown on Sheet 2.
B—Detail of Expenses shown on Sheets 3 and 4.
* In red ink.

[Fol. 245] Sheet 2

Detail of Valuation as of 12-31-29

		Reproduction value	Per-cent condition	Present value
	Production System Property:			
204	Land	20,514	100.0000	20,514
206	Rights of Way	115,508	100.0000	115,508
208	Gas Well Structures	343,382	80.0001	274,706
210	Other Production System Structures	162,136	85.9772	139,400
211	Gas Well Construction	14,192,077	41.8874	5,944,692
212	Gas Well Equipment	9,715,175	41.8874	4,069,434
213	Field Line Construction	774,475	85.0000	658,304
214	Field Line Equipment	1,801,912	85.0000	1,531,625
216	Drilling & Cleaning Equipment	545,401	70.0000	381,781
217	Other Production System Equipment	5,612	85.3706	4,791
	Total	27,676,192	47.4804	13,140,755
	Transmission System Property:			
218	Land	67,818	100.0000	67,818
220	Rights of Way	1,797,299	100.0000	1,797,299
221	Compressor Station Structures	1,076,486	84.3126	907,613
222	Transmission System Measuring Station Structures	129,629	79.9998	103,703
223	Other Transmission System Structures	234,167	81.1382	189,999
224	Compressor Station Equipment	6,294,007	84.2072	5,300,007
225	Transmission System Measuring Station Equipment	496,891	90.0002	447,203
226	Transmission Line Equipment	40,541,891	82.5000	33,447,060
227	Other Transmission System Property	168,708	85.1335	143,627
	Total	50,806,896	83.4618	42,404,329
	General Property:			
244	General Office Land	108,906	100.0000	108,906
245	Other General Land	2,757	100.0000	2,757
247	General Office Structures	284,045	97.0001	275,524
248	Other General Structures	81,595	79.6385	64,981
249	General Office Equipment	132,145	87.8588	116,101
251	General Shop Equipment	104,477	79.7640	83,335
256	General Tools & Equipment			
253	General Garage Equipment	367,339	82.0868	301,537
254	General Laboratory Equipment	11,201	70.4491	7,891
255	General Telephone & Telegraph Equipment	173,529	73.9427	128,312
	Total	1,265,994	86.0465	1,089,344
	General Overheads:			
258 to 266	Undistributed Construction Expenditures	11,164,871	71.0158	7,928,820
	Total Physical Property	90,913,958	71.0158	64,563,248
	Leaseholds	7,284,900	100.0000	7,284,900
	Working Capital and Materials & Supplies	2,690,132	100.0000	2,690,132
	Total Property Used & Useful	100,888,985	73.8815	74,538,280

[fol. 246] Sheet 3

Detail of Expenses for 1929

	Production Expenses:	
350	Superintendence Labor	49,293
351	Gas Well & Field Line Labor	392,671
353	Other Production System Labor	30,353
353½	Land & Map Department Labor	80,414
354	Superintendence Supplies & Expenses	4,342
355	Gas Well & Field Line Supplies & Expenses	69,263
357	Production System Rent	3,353
358	Other Production System Supplies & Expenses	9,016
358½	Land & Map Department Supplies & Expenses	13,036
359	Gas Well Royalties	538,206
362	Maintenance of Other Production System Structures	1,589
363	Maintenance of Gas Well Equipment	53,868
367	Maintenance of Drilling & Cleaning Equipment	40,454
368	Maintenance of Other Production System Equip	2,730
	Total	1,288,588
	Transmission Expenses:	
371	Superintendence Labor	45,465
372	Compressor Station Labor	349,705
373	Measuring Station Labor	19,888
374	Transmission Line Labor	180,253
375	Other Transmission System Labor	24,366
376	Superintendence Supplies & Expenses	5,679
377	Compressor Station Supplies & Expenses	68,729
378	Measuring Station Supplies & Expenses	10,592
379	Transmission Line Supplies & Expenses	53,963
380	Transmission System Rent	133,860
381	Other Transmission System Supplies & Expenses	4,307
382	Maintenance of Compressor Station Structures	22,543
383	Maintenance of other Transmission System Structures	1,108
384	Maintenance of Compressor Station Equipment	140,043
385	Maintenance of Transmission Line Equipment	317,237
386	Changing Transmission Lines	4,681
387	Maintenance of Measuring Station Equipment	15,751
388	Maintenance of Other Transmission System Equip	498
	Total	1,401,668

[fol. 247] Sheet 4

	General Administrative Expenses:	
427	Salaries of General Officers	11,008
427½	Operating & Engineering Service Fees	186,736
428	Salaries of General Office Clerks	102,342
429	General Office Stationery & Printing	5,392
430	Other General Office Supplies	2,989
431	General Officers' Expenses	5,436
432	General Office Clerks' Expenses	3,425
433	General Law Expenses	40,426
434	General Office Rent	17,800
435	Other General Office Expenses	15,498
437	Maintenance of General Office Equipment	927
	Total	391,979
	Other General Expenses:	
442	Laboratory Labor	352
443	Telephone & Telegraph System Labor	3,383
448	Laboratory Supplies & Expenses	2,213
449	Telephone & Telegraph System Supplies & Expenses	1,819
454	Injuries & Damages	63,600
455	Other Insurance	22,223

455½ Employees' Group Insurance	13,600
456 Relief & Pensions	35,912
457 Other General Expenses	55,758
458 Inventory Adjustment	1,229
459 Discounts on Material & Supplies	4,709*
473 Maintenance of Telephone & Telegraph System	3,967
Total	199,347
Taxes:	
Property Tax	857,794
Ohio Excise Tax	282,256
Ohio Public Utilities Commission Tax	10,717
Federal Income Tax	591,543
Total	1,742,310

* Red figures.

[fol. 248] EXHIBIT "C"

The Columbus Gas & Fuel Company—Formal Case No. 5935

The Columbus Gas & Fuel Company—Retail Rate

Sheet 1

Valuation:	
Property devoted to the service of the public within the City of Columbus, Ohio, as of 12–31–29.	
Distribution System	3,252,344
General Property	238,898
General Overheads	436,405
Total Physical Property	3,927,647
Working Capital and Materials & Supplies	100,000
Total Property Used and Useful	4,027,647
Expenses and Return on Investment:	
Proportion applicable to above property for 1929.	
Purchased Gas—from Ohio Fuel Gas Company @ 39.022 plus per M. C. F. (5,955,221)	2,323,848
Purchased Gas Expense	1,078
Distribution Expenses	120,611B
Utilization Expenses	28,866B
Commercial Expenses	108,799B
Business Promotion Expenses	23,762B
General Administrative Expenses	56,263B
Other General Expenses	68,524
Taxes	155,959
Minimum Charges	*43,980
Discounts & Penalties	*34,469
Depreciation	51,154
Return @ 6½%	261,797
Total Expenses and Return	3,122,212
M. C. F. of Gas Sold:	
Proportion applicable to above property for 1929	5,671,639
Retail Rate per M. C. F.:	
Derived by dividing the Total Expenses & Return by the Total M. C. F. of Gas Sold	55.049

NOTE:

A—Detail of Valuation shown on Sheet 2.
B—Detail of Expenses shown on Sheets 3 and 4.
* (Red ink.)

[fol. 249] Sheet 2

Detail of Valuation as of 12-31-29

		Reproduction value	Per cent condition	Present value
	Distribution System Property:			
228	Land	23,550	100.0000	23,550
230	Rights of Way	5,072	100.0000	5,072
231	District Regulator Structures	10,698	89.7457	9,601
232	Other Distribution System Structures	14,868	98.3992	14,630
233	Gas Receivers & District Regulators	31,300	96.1502	30,095
234	Distribution Line Equipment	2,768,637	83.0391	2,299,051
235	Service Line Equipment	515,666	77.3000	398,610
236	Meters	458,902	95.6272	438,835
237	Meter Installations			
238	House Regulators	16,957	84.9973	14,413
239	Other Distribution System Equipment	18,990	97.3512	18,487
	Total	3,864,640	84.1565	3,252,344
	General Property:			
245	Other General Land	52,380	100.0000	52,380
248	Other General Structures	102,153	99.6897	101,836
249	General Office Equipment	33,902	86.8179	29,433
251	General Shop Equipment	18,684	84.2325	15,738
256	General Tools & Implements			
253	General Garage Equipment	51,197	77.1744	39,51[illegible]
	Total	258,316	92.4829	238,898
	General Overheads:			
258 to 266	Undistributed Construction Expenditures	515,370	84.6781	436,405
	Total Physical Property	4,638,326	84.6781	3,927,647
	Working Capital and Materials & Supplies	100,000	100.0000	100,000
	Total Property Used & Useful	4,738,326	85.0015	4,027,647

[fol. 250] Sheet 3

Detail of Expenses for 1929

	Distribution Expenses:	
389	Superintendence Labor	10,713
390	Distribution Line Labor	6,653
391	Labor Removing & Resetting Meters	14,037
392	Labor Inspecting & Testing Meters	256
393	Other Meter Department Labor	2,149
394	Other Distribution System Labor	4,498
395	Superintendence Supplies & Expenses	885
396	Distribution Line Supplies & Expenses	7,651
397	Meter Department Supplies & Expenses	15,733
398	Distribution System Rent	1,672
399	Other Distribution System Supplies & Expenses	4,893
400	Maintenance of Distribution Structures	277
401	Maintenance of Distribution Lines	12,871
402	Changing Distribution Lines	731
403	Maintenance of Service Lines	14,362

	Distribution Expenses:	
404	Maintenance of Meters	17,698
405	Maintenance of House Regulators	36
406	Maintenance of Gas Receivers & District Regulators	4,577
407	Maintenance of Other Equipment	919
	Total	120,611
	Utilization Expenses:	
411	Customers Premises Labor	23,137
415	Customers Premises Supplies & Expenses	5,729
	Total	28,866
	Commercial Expenses:	
420	Operating Labor	87,332
421	Operating Supplies & Expenses	21,467
	Total	108,799
	Business Promotion Expenses:	
422	Salaries & Wages	6,711
424	Supplies & Expenses	17,051
	Total	23,762

[fol. 251] Sheet 4

	General Administrative Expenses:	
427	Salaries of General Officers	2,989
427½	Operating & Engineering Service Fees	39,845
428	Salaries General Office Clerks	4,538
429	General Office Stationery & Printing	1,743
430	Other General Office Supplies	205
431	General Officers Expenses	653
432	General Office Clerk Expenses	21
433	General Law Expenses	2,356
434	General Office Rent	1,204
435	Other General Office Expenses	2,588
437	Maintenance of General Office Equipment	121
	Total	56,263
	Other General Expenses:	
443	Laboratory Supplies & Expenses	470
452	Uncollectible Accounts	6,066
454	Injuries & Damages	25,568
455	Insurance	4,439
455½	Employees' Group Insurance	2,091
456	Relief & Pensions	5,306
457	Other General Expenses	28,131
458	Inventory Adjustments	69
459	Discount on Merchandise Purchased	1,865*
460	Gas Used by Company	1,801*
	Total	68,474
	Taxes:	
	Property Tax	89,565
	Ohio Excise Tax	42,150
	Ohio Public Utilities Commission Tax	1,600
	Federal Income Tax	22,644
	Total	155,959

* In red ink.

[fol. 252] BEFORE PUBLIC UTILITIES COMMISSION OF OHIO

No. 5935

In the Matter of the Complaint and Appeal of THE COLUMBUS GAS AND FUEL COMPANY from an Ordinance of the City of Columbus, Ohio, to Regulate the Price That May be Charged for Natural Gas in the City of Columbus

ORDER—Filed Oct. 3, 1932

This day after full hearing and argument by counsel, this proceeding came on for final consideration upon the complaint of and appeal by The Columbus Gas and Fuel Company from Ordinance No. 645-29 passed by the Council of the City of Columbus, Ohio, September 3rd, 1929, to regulate the price of natural gas in the City of Columbus for a period of five years, the testimony offered and introduced in evidence upon such hearing, and the briefs and oral argument of counsel.

The Commission, being fully advised in the premises, and having this day made and filed, in writing, its finding of facts and coming first to value the property of said appellant, used and useful for the convenience of the public in the furnishing of natural gas for public and private consumption in the city of Columbus, and after considering the inventories of said property filed herein by said appellant, and the respondent, the city of Columbus, the evidence and exhibits, and having completed an independent inventory and valuation of said property, finds and ascertains the value of the several kinds and classes of property of The Columbus Gas and Fuel Company, used and useful for the convenience of the public in the furnishing of natural gas service for public and private consumption in the City of Columbus and of said properties as a whole, as of December 31st, 1929, to be the sum of $4,029,647.00, as more fully set forth in Exhibit "C" appended to the finding of facts filed herein, which exhibit hereby is made a part of this entry by adoption, as fully as if the same were here set forth in its entirety.

To which finding of the Commission, the parties hereto, The Columbus Gas and Fuel Company and the City of Columbus, Ohio, each then excepted, here now except and their exceptions here are noted of record.

And the Commission coming now to consider the complaint of and appeal by said The Columbus Gas and Fuel Company from the aforesaid Ordinance, and having caused an appraisement to be made and having ascertained and hereinbefore determined and having fixed the value of all of the property of the said company, actually used and useful for the convenience of the public in the furnishing of natural gas service for public and private consumption in the city of Columbus, excluding therefrom the value of any franchise, the right to own, operate or enjoy the same, in excess of the amount (exclusive of any tax or annual charge) actually paid to any political subdivision of the State or County as a consideration or the grant of such franchise or right, and exclusive of any value added thereto by reason of a monopoly or merger and having given consideration to the necessity for making reservations from the income for surplus, depreciation and contingencies, and [fol. 253] having taken into consideration all other matters which were deemed proper, the Commission further finds:

That the value of all of the property of The Ohio Fuel Gas Company, exclusive of distribution plant, as of December 31st, 1929, is the sum of $74,538,280.00, as fully set forth in Exhibit "B" appended to the finding of facts filed herein, which Exhibit hereby is made a part of this order by adoption;

That the value of all of the property of The United Fuel Gas Company, exclusive of distribution plant, as of December 31st, 1929, is the sum of $37,422,112.00, as set out in Exhibit "A", which exhibit hereby is made a part of this order by adoption;

That the reasonable and just rate to be paid for natural gas by The Ohio Fuel Gas Company to producing companies at the Ohio River when such gas is to be distributed in the City of Columbus, Ohio, is the sum of 22¢ per thousand cubic feet;

That the reasonable and just rate to be paid for natural gas by The Columbus Gas and Fuel Company to The Ohio Fuel Gas Company at the point of delivery at the city of Columbus, Ohio, is the sum of 39¢ per one thousand cubic feet;

That the reasonable annual charge to be made by The Columbus Gas and Fuel Company for and on account of necessary appropriations to its depreciation reserve ac-

count will be one and one-half per cent of the present value of its depreciable property;

That a reasonable annual rate of return to be allowed The Columbus Gas and Fuel Company for the furnishing of natural gas service in the City of Columbus, Ohio, will be 6½% of the aforesaid value of its property, used and useful for the furnishing of natural gas service in the City of Columbus, Ohio;

That the reasonable costs and expenses of The Columbus Gas and Fuel Company for the furnishing of its natural gas service to consumers within the City of Columbus, Ohio, based upon a consumption of 5,671,639,000 cubic feet of natural gas for the calendar year ended December 31st, 1929, were as set forth in Exhibit "C", Sheet 1, appended to the finding of facts filed herein, which Exhibit hereby is made a part of this order by adoption;

[fol. 254] That for the same fiscal period, the reasonable operating expenses of The Ohio Fuel Company and of The United Fuel Gas Company were as set forth in Exhibits "B", sheet 1, and "A", sheet 1, attached to the finding of facts filed herein, which Exhibits are hereby made parts of this order by adoption;

That the rate per thousand cubic feet of 48¢, with an additional charge of 5¢ per thousand cubic feet, if the monthly bills are not paid within a fixed time, with a minimum charge of 75¢ per month without discount, fixed and prescribed by said Ordinance, are unreasonable and unjust and ought not to be ratified and confirmed, and that just and reasonable rates and charges should be substituted therefor;

That the rate per thousand cubic feet of 55¢, with an additional charge of 5¢ per thousand cubic feet, if monthly bills are not paid within a fixed time, and a monthly minimum charge of 75¢, without discount, are just and reasonable rates and charges for the service furnished and supplied by said appellant in the City of Columbus, Ohio, and

That the gross and net revenues derived by said The Columbus Gas and Fuel Company for furnishing natural gas for public and private consumption, in the City of Columbus, at the rates and charges hereinbefore found by the Commission to be just and reasonable will be sufficient

to yield said The Columbus Gas and Fuel Company a reasonable compensation for such service.

It is, therefore, ordered, That the rates and charges hereinbefore set forth which are found and determined by this Commission to be just and reasonable for the furnishing of natural gas service by The Columbus Gas and Fuel Company for public and private consumption in the City of Columbus, be, and hereby they are substituted for the rates and charges fixed by said Ordinance, which the Commission has found to be unjust and unreasonable, and the Commission having made inquiry and investigation with respect to the ability of said The Columbus Gas and Fuel Company to furnish natural gas for public and private consumption in the city of Columbus, as fixed by said Ordinance, and having found that said The Columbus Gas and Fuel Company will be able to furnish its said product in said City for said period, it is therefore further,

Ordered, That the rates and charges not greater than or in excess of the rates and charges for the furnishing of natural gas to the City and private consumers, and to the public buildings, grounds, streets, alleys and market places [fol. 255] in the City of Columbus, Ohio, for public and private consumption, which the Commission herein has found to be just and reasonable, be, and remain in force and effect for a period of five years from and after the effective date of the Ordinance herein complained of and appealed from, and said The Columbus Gas and Fuel Company hereby is notified, directed and required to furnish its product to its consumers thereof, public and private, in the City of Columbus, Ohio, for said period.

To which order of the Commission, The Columbus Gas and Fuel Company, and the City of Columbus, each then excepted, here now except, and their exceptions here are noted of record.

The Public Utilities Commission of Ohio. E. J. Hopple, Chairman. Frank W. Geiger, Commissioners.

Dated at Columbus, Ohio, this third day of October, 1932.

A true copy:

Ira E. Sprankle, Superintendent of Investigation.

Commissioner Bricker dissents as per Opinion filed.

[fol. 256] BEFORE PUBLIC UTILITIES COMMISSION OF OHIO

No. 5935

In the Matter of the Complaint and Appeal of THE COLUMBUS GAS AND FUEL COMPANY from an Ordinance of the City of Columbus, Ohio, to Regulate the Price That May Be Charged for Natural Gas in the City of Columbus

SEPARATE OPINION

On the third of September, 1929, The Council of the City of Columbus enacted ordinance 645-29, to regulate the price of natural gas in the City of Columbus for a five year period, which ordinance fixed a minimum charge per month per customer of 75¢ without discount, and a rate of 48¢ for each one thousand cubic feet of natural gas consumed, having heat value of not less than 900 B. T. U. per cubic feet, and an additional charge of 5¢ for each one thousand cubic feet of natural gas consumed through each meter each month if the monthly bills are not paid within a fixed time.

This ordinance was approved by referendum vote in accordance with the Charter of the City of Columbus on the 5th day of November, 1929. Thereafter The Columbus Gas and Fuel Company, one of the companies furnishing natural gas to consumers within the City of Columbus, filed its appeal with this Commission, in accordance with the provisions of Section 614-44, claiming that the rate fixed by the Council in the ordinance hereinbefore referred to was unfair and unreasonable and did not provide a sufficient charge to give the company an adequate return upon the value of its property used and useful for the rendering of the service within the City of Columbus and prayed that the Commission fix a just and reasonable rate allowing the company a fair return upon its used and useful property.

The common stock of The Columbus Gas and Fuel Company, except qualifying shares, is owned by The Columbia Gas and Electric Corporation, the parent company also of The Ohio Fuel Gas Company, which sells gas at wholesale to The Columbus Gas and Fuel Company at the City gates of Columbus, and also of The United Fuel Gas Company, which is a producing company beyond the river and which sells at the Ohio River, gas at wholesale to The Ohio Fuel Gas Company, which gas is co-mingled with the gas produced by

The Ohio Fuel Gas Company and also that purchased from [fol. 257] independent producers throughout Ohio and then transmitted by The Ohio Fuel Gas Company to the various points of distribution, in some of which The Ohio Fuel Gas Company sells directly to the consumers and in others such as Columbus, sells directly to a separate distributing company, sometimes inter-corporately related, as in this case, and in other places not so related.

Another subsidiary of The Columbia Gas and Electric Corporation is The Columbia Engineering and Management Corporation, which manages The United Fuel Gas Company, The Ohio Fuel Gas Company and The Columbus Gas and Fuel Company and furnishes to them certain engineering services. A direct charge is made for engineering and 2% to 2½% of the gross earnings charged as the management fee of each subsidiary company.

The company began its case upon the theory that to prove the reasonableness of the gate rate for Columbus, it would only be necessary to show similar gate rates, even though they might largely have been made by interlocked directorates of separate corporations and that in the absence of any fraud shown by the City in the enactment of such a contract or fixing of such a rate, that the gate rate would stand.

In the early history of this case a motion was presented by the City to require the company to present proof of the reasonableness of the charge made at the gate for gas. This motion was sustained by the Commission and there then began the investigation of property valued at over $115,000,000.00 rather than $4,000,000.00, plus, the value of The Columbus distributing plant.

The case in the Federal Court, which was often referred to during this investigation, assumed a gate rate fixed by contract, which was agreed to by the Company and the City, and therefore that investigation was limited to the value of the distributing property in Columbus.

If the Commission were limited in its investigation to determining the cost of distributing gas in the City of Columbus above the 45¢ gate rate fixed by The Ohio Fuel and The Columbus Company, it is apparent immediately that the ordinance was invalid and likewise easily seen that if this Commission could not investigate the reasonableness [fol. 258] of the gate rate that a higher gate rate also could

be fixed than 45¢ and the jurisdiction of this Commission completely circumvented as far as rate making is concerned.

The decision of the Commission in regard to the gate rate was the same as had previously been made in The Dayton Power and Light case by this Commission. Subsequently the rule was finally fixed by the Supreme Court of the United States in the Illinois Bell Telephone case, 202 U. S. 183, wherein the Supreme Court of the United States sustained the jurisdiction of a Federal District Court, and indirectly a Commission, to determine the profits which might reasonably accrue to a related company selling its product to a public utility and to find the cost of any engineering or management services rendered by the parent company or another subsidiary to a public utility.

The Commission directed, in its order sustaining the motion of the City of Columbus, The Columbus Company to produce testimony and all records showing the profits accruing to The Ohio Fuel Gas Company in the sale of gas to the Columbus Company at the City-gates—whereupon, the Commission might fix a reasonable allowance for gate rate chargeable to expenses by The Columbus Company, which would produce no more than a reasonable profit to The Ohio Fuel Gas Company; and to produce evidence showing the cost of the services rendered to The Columbus Gas and Fuel Company by the engineering and management corporation, under its contract.

During the argument in this case the Supreme Court of the United States reiterated its position in a stronger case almost parallel to the instant one, Western Distributing Company vs. Public Service Commission of Kansas, No. 337, decided February 29, 1932.

In that case the propriety of a 40¢ gate rate between interrelated companies was under consideration and therein the Supreme Court said:

"where, however, they constitute but a single interest and involve the embarkation of the total capital in what is in effect one enterprise, the elements of double profit and of the reasonableness of inter-company charges must necessarily be the subject of inquiry and scrutiny before the question as to the lawfulness of the retail rate based thereon can be satisfactorily answered."

[fol. 259] "It is enough to say that in view of the relations of the parties and the power implicit therein arbitrarily to

fix and maintain costs as respects the distributing company which do not represent the true value of the service rendered, the State authority is entitled to a fair showing of the reasonableness of such costs, although this may involve a presentation of evidence which would not be required in the case of parties dealing at arms' length and in the general and open market, subject to the usual safeguards of bargaining and competition."

We find in the 1931 Annual Report of the Columbia Gas and Electric Corporation the following:

"As the properties are all thoroughly integrated and interconnected, they constitute a single operating unit."

These two decisions are epoch making in utility regulation and give to this Commission, in its opinion, full jurisdiction to determine all the facts necessary to sustain or disprove the 45¢ gate rate as a reasonable allowance to The Columbus Company and to substitute for it as a reasonable expense a fair gate rate and in doing this to determine the reasonableness also of the rate charged at the river by The United Company to The Ohio Fuel Gas Company and likewise to determine what shall be allowed as an expense to the related companies in payment for services by The Columbia Engineering and Management Corporation.

Ten years ago in Ohio a similar investigation as this would have brought promptly to issue the question of the supply of gas,—the company contending then as did other companies that the supply was rapidly running out and that there must be consideration given to the amortization of property and unobserved depreciation allowances, based upon a maximum gas supply of ten years. The company's witnesses in this case state that for all practical purposes the supply of natural gas available for this market is unlimited.

The Commission therefore can approach this problem without giving consideration to the life of the property other than as to those factors resulting from normal depreciation and obsolescence.

There is some contention in this case, upon which the Commission need not pass, that these mains will ultimately be used for the transportation of artificial gas from the

coal regions to the present established markets, as the natural gas supply wanes.

Ohio is only surpassed by the State of California in the number of consumers of natural gas and The Columbia Sys-
[fol. 260] tem then has here in Ohio the best developed market for natural gas in the world and yet during the progress of this case, the same company or system is engaged in the construction of transmission mains to supply the larger industrial centers of the east.

This Commission is aware of the fact that this gas, under the law, is privately owned and being private property is subject to the use of the ownership to the most profitable purpose to which it can be applied, but the Commission also recognizes and insists upon certain obligations on the part of the company in return for the great system which it has been permitted, under the law, to build up as well as the right of eminent domain given it by the sovereign authorities, to render good service to all alike and at a rate not greater than the reasonable value of the product which will produce a just and fair return to the company for the use of its property.

River Rate

In determining the profits accruing to The Ohio Fuel Gas Company the first question confronting the Commission is that of a reasonable charge to The Ohio Fuel Gas Company for gas supplied by the United Company at the river. In the investigation, this angle of the case was presented by bringing into this record the complete record of the United case in West Virginia. A value was found and a rate fixed in that case by the West Virginia Commission and the decision of the Commission was reversed by the Supreme Court of West Virginia and a subsequent rate tentatively fixed by the West Virginia Commission wherein the final determination of the matter is yet pending.

I have taken the facts as tentatively determined in that case by the West Virginia Commission and as shown by the record and have applied to them the principles used in the determination of the value of the Ohio Fuel Gas properties and with the allowances for expenses comparable to those allowed in The Ohio Fuel Gas case, which principles will be hereinafter discussed.

Attached hereto and marked Exhibit A and made a part of this opinion is the finding as to value, proper allocation and allowances for expenses and the fixing of depreciation and return. As a result of such computation I find the reasonable rate at the river to be charged by The United Fuel Gas Company to The Ohio Fuel Gas Company to be 17.79¢ [fol. 261] per thousand cubic feet of gas. For the purpose of determining the expenses of The Ohio Fuel Gas Company in this investigation, I would fix the charge at 17.79¢ per thousand cubic feet, which would be allowed as an expense to The Ohio Fuel Gas Company in Exhibit B, which likewise will be attached hereto and made a part of this record.

Gate Rate

In determining the reasonable profits accruing to The Ohio Fuel Gas Company in its dealing with the Columbus Company, I have approached the problem from the point of view of a utility rendering service to the public which The Ohio Fuel Gas Company really is in a large portion of the gas distributed by it, rather than determining a profit upon the amount of sales made by the company. In this consideration the Commission is immediately confronted with these two very difficult questions:

1. What is the proper allocation of The Ohio Fuel Gas property used and useful in furnishing gas to the City of Columbus?

2. What should be the fair valuation of the leaseholds owned by The Ohio Fuel Gas Company and used in the conduct of its business?

The company contends that there can be no particular allocation of either the production or transmission property to any one market except upon the basis of sales or consumption of gas. The City, in direct conflict with this, contends that production property should be allocated upon the basis of sales, but that the transmission property should be allocated to the particular market upon a basis of mileage multiplied by peak demands of the various communities. The City has designated this plan as the demand mileage basis of allocation.

I am impressed with the fact that this property has been built up by the bringing together of many other distribut-

ing, producing and transmitting gas properties; that it is operating as a unit and that the complete structure which has been built is really used and useful for the furnishing of gas throughout the territory and that in an attempt to allocate any particular portion of the property to a given market so many divergencies appear and so many errors are apparent, producing inequalities as between the various communities that I have discarded as impracticable and un- [fol. 262] reasonable the plan submitted by the city for allocation and am fixing approximately a gate rate which will be available throughout the territory served by The Ohio Fuel Gas Company.

I have not been forced to this position by the desire for an easy way out or because of relief which it would give in the investigations which are being conducted throughout the State, but rather by the impossibility of determining a factor which would reflect justly the credit that should be given a particular community because of the proximity to the market or of the varying transmission lines which would be necessary to reach the gates of the many cities served. Columbus gas may come from West Virginia, it may come from southern Ohio fields or from northern Ohio fields. It may be brought through one of several transmission systems or compressed in one station or in many. It is probable that gas will someday be brought into this system in Ohio from the west.

It is impossible to trace this gas in any portion of the system and it is the pressure applied from the various sources that determines the flow of the gas rather than the source of any one transmission line.

The second important question on which there is little precedent concerns the valuation of leaseholds of The Ohio Fuel Gas Company; first in determining the used and useful property and then the value that should be applied to that which is used and useful. This Commission is limited in its method of determining valuation by statute and by the decisions of the Supreme Court of Ohio. By no stretch of the imagination can we conceive of a reproduction valuation of the gas in place. The method of using cost to determine value of leaseholds has been discarded by the Supreme Court in the first Logan Gas valuation case and it is practically impossible for this Commission to determine a valuation based upon market prices because of the fact

that there is no gas property moving on the market as extensive as this and there can be found no ready buyer and willing seller whereby to determine a market value.

There has grown up in the gas business a classification of gas lands known as classes 1, 2, 3 and 4 leaseholds. So far as I can determine the classification practice in this case is similar to that employed by the Logan Company. In that case the Commission excluded classes 2, 3 and 4 of [fol. 263] the leaseholds, shown upon the records of the company as not used and useful property and that was sustained by the Supreme Court of the State in 121 O. S. 527. The Commission after that decision and upon the mandate from the Supreme Court fixed the value of the class 1 leaseholds of the Logan Gas Company, based upon the testimony in that case and upon a consolidation figure on the books of the company at $25.00 per acre.

In this case the city introduced testimony showing the reproduction cost of No. 1 leaseholds to be $1,569,479.88. The company claimed for these leaseholds $19,252,029. It will be noted that there is a wide range in the valuation set up by the company's witnesses varying from $39.37 per acre to $90.00 per acre. I believe the Commission, following its valuation in the Logan case (which property is now a part of the Ohio Fuel property) which valuation was sustained by the Supreme Court, should fix the value of the used and useful property, being Class 1 leaseholds at $25.00 per acre. This valuation for Class 1 leaseholds is approximately $2,500,000.00 greater than the book value of all leaseholds of The Ohio Fuel and Logan Gas companies combined if the arbitrary write up of approximately $3,700,000.00 in the Logan company's leaseholds during 1919 is eliminated. This amount of $25.00 per acre, in my opinion, would reasonably cover costs which were, as far as the record shows, reasonably fixed by the City's witnesses and provide a sufficient amount for the capitalization of the delayed rentals theretofore paid upon the other classifications of property when the same should be transferred to the used and useful classification upon the drilling of a productive well.

I, therefore, following the above classification and because of the fact that I have permitted the capitalization of delayed rentals in the allowance of $25.00 per acre, disallow delayed rentals on class 2, 3 and 4 leaseholds, in de-

termining the Ohio Fuel profit. These delayed rentals actually enter into the value of the leaseholds themselves and become a part of the rate base, if the reproduction theory is applied to the total Ohio Fuel property.

If this rule were not followed it would be possible for a company, less scrupulous than this one, to pay delayed rentals beyond requirements in order to increase the expenses and upon that basis fix a high rate to the consumer [fol. 264] which would have to be approved by a regulatory body and then after the rate had once been established, release the reserve leaseholds, as the company can do under its contracts and cut down the expenses of the company, thereby establishing a rate which would be unjust, unfair and excessive to the public.

These two important issues determined we can proceed now to the determination of the details necessary in the fixing of the value of The Ohio Fuel Gas property.

Work in Progress

This item is designated by the company as Incomplete Construction, and in this valuation it is eliminated from the rate base because the property is not yet used and useful and in the valuation method followed by the Commission, interest on money is allowed during the construction program. It is not revenue producing property at the date certain and should be only a part of the property used and useful upon which a rate is fixed when it is actually completed and placed in use.

Property Not Used and Useful

This adjustment eliminates from the rate base the old boiler room and shop at Sugar Grove Station which has been abandoned and is no longer used and useful.

Organization Expenses

I have eliminated any specific allowance for arganization due to the fact that this element is in the allowance of 14% for undistributed construction expenditures.

Undistributed Construction Expenditures

This allowance is a judgment figure based upon engineering experience and there is presented to this Commis-

sion in the record a wide variance of opinion as among the engineers of the city and the company. These figures are in all cases based upon estimates rather than actual experience. The Company has applied different figures to production and transmission systems and the general property while the City has taken an over all figure, eliminating lands. In the Company's set up we find 4% allowance for the cost of financing upon all the property and 7% for interest during construction. Immediately it is apparent that the reproduction method of valuation is highly theo- [fol. 265] retical. There has been wide variance even in the decision of the Supreme Court of the United States from the strict reproduction theory which if carried to the ultimate would include items of overhead, theoretically, which never have been and likely never would be expended in the actual construction of the plant.

These various plants which go to make up The Ohio Fuel property were not constructed as producing systems, transmission systems and general property but as a unit and have all been brought together as component parts of one property. It is true that The Ohio Fuel Gas Company in some towns sets up a gate rate and in other municipalities actually renders the service direct to the consumers, but the Commission will apply the general overhead charges to all property of The Ohio Fuel Company based upon the valuation fixed herein. This will include land and right-of-way but excludes working capital and leaseholds and is divided as follows:

Engineering and superintendence during construction	2.5%
Organization	1.0%
Administrative expenses during construction	1.2%
Law expenses, injuries and damages and taxes during construction	1.8%
Interest during construction	6.0%
Other expenses which include omissions and contingencies	1.5%
Total	14.0%

It appears from the record that an allowance for omissions and contingencies is made by the company also in its direct overheads and therefore enters into its unit costs,

but no deduction has been made to take care of this duplicate charge by the company.

Excessive Direct Overheads

The company's inclusion of amounts representing contractors' profit in its direct labor overheads together with certain inclusions of direct material overheads considered excessive, have been disallowed. Under the organization anticipated and allowed for in General Overheads, coupled with the facilities available to the company under a construction program contemplated by the reproduction theory, such portions of the work, if any, as may be let to sub-contractors have been adequately considered in the valuation, and allowance therefor should not be superimposed in the company's direct overheads.

Cost of Financing

Following the practice employed by this Commission and [fol. 266] the decisions of the Supreme Court and the fact that I have considered the cost of money in the allowance for undistributed construction expenditures this item of cost of financing is excluded from the rate base.

Much testimony centered around the question of whether or not there should be allowed in the reconstruction of this property an allowance for cost of financing and a sharp distinction was made between what should be regarded as a cost of financing and what should be regarded as a discount upon the securities sold.

We are impressed with the fact that the statute does not contemplate the cost of gathering together the money necessary to construct a public utility. When it speaks of the value it speaks of one hundred cent dollars.

The statute does not contemplate that one who has no money to build a given plant, but must secure the same by the sale of his securities, shall have the burden of this cost of financing passed on to the consumer. The fact that the money invested is gathered from numerous small contributions through the sale of stock does not affect the principle.

Those wishing to invest money in a public utility should make available a one hundred cent dollar for the purpose and not a ninety-five cent dollar.

Working Capital Including Material and Supplies

The amount of working capital including materials and supplies has been fixed by the company at $3,700,000.00 and by the City at $1,669,212.00. The accounts of The Ohio Fuel Gas Company due from the Columbus and Fuel Company are absolutely certain, time of payment being determined by the managing corporation which manages both the seller and the purchaser. A reasonable amount has been allowed The Columbus Gas and Fuel Company for working capital, materials and supplies. The Ohio Fuel Gas Company is operating directly, supplying gas to the consumers in many communities of the State. There might be a higher percentage for working capital, material and supplies needed for those distribution centers. The further fact must be taken into consideration that a good portion of the gas used by The Ohio Fuel Gas Company is purchased from The United Fuel Gas Company, another re- [fol. 267] lated company, wherein in the West Virginia case a reasonable sum has been allowed for working capital, including an account for gas sold. The time of payment of that account is likewise in the complete control of the same engineering and managing corporation. The allowance in this case will be $1,700,000.00 to The Ohio Fuel Gas Company, or approximately 2.7% of the present value of its physical property including indistributed construction expenditures. It is my opinion, considering the intercorporate relations of the companies and the allowances made to the distributing company in this case and the supplying company in the case of The United Fuel Gas and the greater proportion of the material and supply account of The Ohio Fuel Gas Company which is actually used in distributing gas, that this allowance is a reasonable and fair sum for this item.

Going Concern Value

This Commission is an administrative board of the State Government. It is directly answerable to the Supreme Court of Ohio without an intervening tribunal, both as to questions of fact and law and it is my apinion that the principles which should herein be applied are those which have been determined by the Supreme Court of Ohio as the law of the State.

In the Cleveland Illuminating Company case, 98 O. S. 462, the Supreme Court reversed an allowance by this Com-

mission for the cost of attaching business. In this same case also, the Commission included a sum for cost of financing of its tentative value and eliminated it in the final value, which was sustained by the Supreme Court.

The direct evidence submitted by the company in this case, together with all the circumstances known to the Commission, are no more convincing or compelling than that which the Supreme Court of Ohio found, in the early Cincinnati Gas & Electric Company case, 96 O. S. 554, 559 (1917)—as well as in all subsequent cases in which the issue has been raised—to be insufficient to sustain the burden placed by the law upon the company. See also Lima Telephone Company vs. Public Utilities Commission 98 O. S. 110, 124 (1918); Cincinnati vs. Public Utilities Commission, 113 O. S. 259, 294 (1925); Hardin-Wyandote Lighting Company vs. Public Utilities Commission, 118 [fol. 268] O. S. 592, 602 (1928); Logan Gas Company vs. Public Utilities Commission, 121 O. S. 507 (1929); and Portsmouth Gas Company vs. Public Utilities Commission, 119 O. S. 24 (1928). And see the decision of the United States Supreme Court in Des Moines Gas Company vs. Des Moines, 238 U. S. 153, 163 (1915), the only proceeding in which the question of a separate allowance for going value has been before the Supreme Court as a decisive issue, and in which the Court upheld the reasonableness and constitutional validity of the same rule which has prevailed, unimpaired, in this State for the past fifteen years.

Since the rejection of a separate going value figure in the Cincinnati Gas & Electric Company case, supra, the valuation decisions of this Commission have been noteworthy in their freedom from "percentage" and "judgment" allowances based upon "expert" testimony and supported by "estimates" and "calculations" of alleged costs—costs which in their very nature are wholly hypothetical and conjectural, and which, in any event and under any acceptable theory of rate regulation, have no proper place in the capital account of a utility company doing business in this State. Let it here be noted that under the classification of accounts prescribed by this Commission for the gas utilities under its jurisdiction, "new business" expenses are provided for in the operating accounts; and be it further noted that in the instant case we have allowed as an operating cost so much of the company's claim for "new busi-

ness'' costs as may properly be allocated to its utility, as distinct from its appliance business.

The effect of unwavering adherence to the ''Ohio rule,'' both by the Supreme Court of Ohio and by this Commission, has manifested itself in the stability and predictability of our valuations and the enhanced dignity and economy of the valuation proceedings before this body. And it is significant that an overabundant flow of capital into the utility industry of Ohio has continued unabated since 1917.

Both the rule of reason and the rule of law, generally as well as the facts of this particular case, dictate our finding that no separate allowance for going value shall be made.

[fol. 269] Therefore, in the case of The Ohio Fuel Gas Company as in the case of the United Fuel Gas Company no independent allowance for going concern has been made upon which the company is entitled to a return or which must be taken into consideration in arriving at profits which may be realized by either the producing or the producing and transmitting companies.

Depreciation Reserve

The law is well established that the unexpended reserve for accrued depreciation should not be deducted from the rate base and I have followed the rule as laid down by the Supreme Court of Ohio in the Cincinnati Bell case, 113 O. S. 259 and do not deduct such unexpended reserve.

The reserve accounts of these various companies have been taken into consideration in arriving at a proper allowance to be credited to this account as an annual expense of the respective companies.

The rate allowed herein as an expense for depreciation and amortization, compared with the seven year average set up on the Ohio Fuel Gas Company's books is about ½% greater per year than the company has used to produce a reserve of over 22% of the book value of the depreciable property. This gives adequate recognition to greater reserve requirements in the future, indicated as proper by the fact that the accrued depreciation found by appraisal is about 28% of the book value of the depreciable property.

Gas Well Depreciation

Mr. Blundon's depreciation figure of gas wells was based upon the commonly accepted practice among engineers of

determining the percent condition from the rock pressure showing at the initial flow and at the time of the appraisal. This is the method used by Ford, Bacon and Davis, the company's appraisers in this case, in the United Fuel case and was the method under which Ford, Bacon and Davis were proceeding in the Ohio Fuel Gas case until, according to the testimony of Mr. Weymuth, he convinced them that a different method should be used, which would bring about a higher percent condition and therefore a higher valuation.

Considering that Mr. Weymuth further testified that he favored another method of depreciation, even giving a higher valuation than that given by Ford, Bacon and Davis and the fact that the rock pressure method is an old established one used in determining depreciation of gas wells and that it has been adopted heretofore by Ford, Bacon and Davis, I accept the rock pressure method as used by Mr. [fol. 270] Blundon and apply the same to the valuation of the gas wells fixed by the Commission.

Depreciation of Other Property

I am of the opinion that the proper engineering practice in fixing depreciation is by actual observation of the physical condition of the property and, in arriving at the proper depreciation to be allowed in The Ohio Fuel Gas case, excluding gas wells which have been heretofore dealt with, I have followed Ford, Bacon and Davis, engineers who actually made observations of the property to determine its condition and have applied such percent condition as determined by the witnesses to the Commission's value of each item of property as fixed in this case and find the percent condition of the total property to be an average of 70.8551%. I have not applied the depreciation percentage to working capital, materials and supplies and leaseholds but allowed them on a 100% basis.

Allowance for Purchased Gas

The amount included by the company for gas purchased from the Preston Oil Company has been reduced by $76,363.00 in recognition of the contract price for such gas as shown by the record.

Allowance for General Administrative Expenses

Due to the expense adjustment made on the unoperated leases, the allocation of general administrative expenses is changed, resulting in a reduction of $48,476.00 applicable to the wholesale operations of The Ohio Fuel Gas Company. I have further reduced the operating and engineering fees to a cost basis in the sum of $143,162.00, following the rule laid down by the Supreme Court in the Illinois Bell Telephone case hereinbefore referred to.

The readjustment of expenses of The Ohio Fuel Gas Company, because of the disallowances of rentals on the unoperated leaseholds, has made necessary a reduction in allocation of Other General Expenses, in the amount of $21,490.00. I have disallowed as utility commission expenses, which is in effect, rate case expense, $21,913.00. The Ohio Fuel Gas Company has had no rate litigation before the Commission involving the rate in the City of Columbus and if it had, I have followed the practice of disallowing rate case expenses where no increase in rate is shown to be justified, by the [fol. 271] litigation. Also, included is the item of discounts on materials and supplies which have been omitted by the company in the sum of $4,709.00.

Another amount disallowed as improper charged by The Ohio Fuel Gas Company is Business Promotion Expense, $4,752.00. As applied to Columbus, no business promotion is needed at all by The Ohio Fuel Gas Company. Rate Case expenses in the sum of $25,498.00 are excluded for the reasons hereinbefore outlined in public utility commission expenses. Loss on bonds in the sum of $1,019.00 is disallowed. Income Tax Service amounting to $8,286.00; and sundry items in the amount of $504.00 are disallowed, amounting to a total of $40,059.00. Allocated upon the basis of the wholesale and retail business this sum of $40,059.00 shows an allocation of $25,377.00 to the wholesale business.

The above changes in expenses necessitates a recomputation of taxes with the following reductions:

Excise Taxes	$219,386.00
P. U. C. O. Taxes	9,049.00
Federal Income Taxes	957,561.00
Total	$1,185,996.00

Property taxes actually paid have been allowed as an expense thus reducing the amount claimed by the company for taxes accrued by $11,328.00.

An error apparent in the company's calculation of the differential to The Northwestern Ohio Natural Gas Company produced a difference in the sum of $9,208.00.

Depreciation and Amortization.

I have, in computing an allowance for depreciation and amortization, used 2½% of the value of the property, excluding land, working capital and material and supplies, which reduces the amount claimed by the company in the sum of $5,103,855.00. A complete study has been made of the depreciation charges of the company which show for the year 1929, an unexpended depreciation reserve in the sum equal to 22.20% of the book value of the company's property.

It is my opinion, therefore, that an allowance of 2½% on the value of the property of The Ohio Fuel Gas Company is a reasonable allowance for depreciation in view of the fact that there has been allowed completely the company's figures for maintenance, including non-productive well drilling expense.

[fol. 272] These amounts are sufficient, when taken together, to maintain the property in a high standard of efficiency and to provide a reserve to take care of the property as it wears out and to ultimately provide for the complete replacement of the property.

The amount of depreciation, herein allowed, applicable to the portion of its property considered in this case is substantially the same amount in dollars, as shown by the books of the company for its entire properties including its distribution system.

M. C. F. of Gas Sold

The total gas sold for 1929 is corrected to 53,579,575 M. C. F., detailed on page 158 of the company's reply brief. This figure has been found to be correct and is 364,219 M. C. F. less than the figure used by the company.

Rate of Return

The Ohio Fuel Gas Company has an unlimited supply of gas, either of its own right or through affiliated companies. It has the greatest established market in the world,

with the exception of the State of California, and has a virtual monopoly in the production and supplying of gas throughout a large portion of the State of Ohio. The history of the company is that money has flowed into this enterprise without an excessive cost and has been available for the necessary additions, extensions and improvements, even during this litigation, in unlimited amounts almost, for the construction of pipe lines into new fields and new markets.

It has recently come to the attention of the Commission in the Barnesville case that this Company has drilled wells beyond its requirements and that it has been necessary to cap many of them and shut off production even to the very great dissatisfaction of the lessors. I likewise realize that the value of the dollar has increased in recent years; that the returns of business have been greatly restricted and although a utility should not be subject to the constant fluctuation of commodity prices, yet it is important that consideration be given to the increase in the price for gas in the last ten years in this territory—going up as it has with other commodity prices and I do feel that the rate of return should somewhat reflect the present trend, the present market and the value of money.

[fol. 273] I find, therefore, a reasonable rate of return, allowing a proper profit to The Ohio Fuel Gas Company for the service rendered to be 6½% on the value of its property used and useful as hereinbefore determined. I have included the Federal Income Tax as an expense and as expressed by the Supreme Court in the Galveston case, this really raises the rate of return above the 6½% allowed.

Following, therefore, the principles hereinbefore detailed, I have arrived at a gate rate of 31.70¢ per M. C. F. for gas sold to The Columbus Gas and Fuel Company, which amount is, in this computation allowed as an expense to The Columbus Gas and Fuel Company. The computation and figures for the valuation, the revenues and expenses and the rate of return for the Ohio Fuel Gas Company are fully set out in Exhibit B, attached hereto and made a part of this opinion.

Retail Rate

We now come to the consideration of the property of The Columbus Gas and Fuel Company used and useful in the

distribution of gas within the City of Columbus. In the application of the proper unit costs for materials and supplies, I am of the opinion that the material costs applied by the company are proper and that the construction job is not of such a size as to possibly vary greatly the quotations which were made to the company and the actual payments for the grade of pipe used.

I am of the opinion that the wage scale used by the Company is too high for the purpose of a reproduction cost new set-up. It would be a continuous construction program lasting over a period of two or three years. The City contended that some consideration should be given to the nature of the construction program and the lower cost of labor, which is recognized, both as of the date certain and as to the present time. The trend of labor costs has been constantly downward since the date certain. The lower labor costs and labor performance as set out by the city are proper and should be applied in evaluating the Distribution Line Equipment and Service Line Equipment in this case.

In regard to the cost of meters, the experience of the company is used although it possibly does not reflect the [fol. 274] discount that would be available on large orders such as would be possible in a reconstruction program.

The Gas Holder

An item of the difference in valuation by the city and company is due to the exclusion in the city's inventory of lots 32 and 35 at Spruce Street and Pennsylvania Avenue, which constitute a site for a gas holder,—the company having valued such property at $18,700.00. The City does not dispute the value, but does raise the question that the property is not used and useful. This brings us to the investigation of the utility of a gas holder, which was constructed for the distribution of artificial gas. The same item appears in Account 233—Gas Receivers and District Regulators—where the company's valuation is $176,260.00 and the city's valuation is $30,095.00 a difference of $146,165.00. This difference is due to the exclusion in the city's valuation of the gas holder and the pertinent equipment located upon the land above referred to, the value of which has been excluded by the city under Account No. 228.

These two items covering the land and the structure above referred to may be considered together. The question of the right of the company to include the gas holder in its valuation was the center of much testimony and controversy, it being maintained by the company that it is used and useful, whereas the city admits that it is used, but that it is not, as a matter of fact, useful. In brief, the company's evidence is to the effect that the holder was tied into the natural gas system in 1912 and that it is used to build up the low pressure during peak loads, caused by the demand on the system, especially in the down-town section.

It developed that this holder, originally designed to furnish pressure for the distribution of artificial gas, has been infrequently used, in the course of the years it has been attached to the natural gas mains. It was further disclosed that were a natural gas distribution system to be now reproduced, this holder would have no place in the distribution of the gas which comes to the gate at a pressure higher [fol. 275] than could be furnished by the gas holder and that the contents of this holder, if called upon to furnish an emergency supply, in case of any disturbance of the natural pressure or any breakage of the transportation mains would furnish an inconsequential amount of gas.

As a storage tank it is useless and as a stabilizer it has no value and as a pressure producer it is without effect. It is manifest that as far as the distribution of the natural gas within the city is concerned, it is a useless appendage. It should be excluded from the valuation.

General Office Equipment

The company's valuation of $29,433.00, based upon inventory, actual prices and observed depreciation of the item of General Office Equipment, has been accepted.

General Shop Equipment—Acct. 251. General Tools and Implements—Acct. 256

The valuation fixed by the company because of the actual observation and inspection made by the company—the city having made no such inspection of this property, has been accepted.

General Garage Equipment—Acct. 253

I accept the company's figure for this item, not being impressed with the fixing of depreciation based wholly upon

age. Actual observation seems to be the most practical way of determining per cent conditions of property, although there may be some basis for considering age in this item because of the fact that automobiles are known to depreciate very rapidly and there is a fixed standard of valuation based upon age.

Undistributed Construction Expenditures

There has heretofore in the case of The Ohio Fuel Gas Company been applied for undistributed construction expenditures the figure of 14% on the valuation fixed by the Commission. We are here dealing with a smaller plant, the construction of which would not take the time necessary for the reconstruction of The Ohio Fuel Gas system thereby lessening charges for interest and taxes, and I am of the opinion that these accounts known as Undistributed Construction Cost and Omissions and Contingencies should be 12½% of the valuation found by the Commission of the physical property.

[fol. 276] Working Capital Including Materials and Supplies

For working capital including materials and supplies, there has been taken a figure of $100,000.00 to take care of payroll expenses, gas purchased and materials and supplies necessary. In fixing this amount I am aware of the fact that a part of the amount is to be used to purchase gas from an affiliated company, which in turn purchases gas from another affiliated company, and that each of these companies has been allowed amounts for working capital sufficient for its needs.

Going Concern Value

Regarding this plant as a going concern and allowing a sufficient amount for working capital and materials and supplies, I am complying with the rule laid down by the Supreme Court of Ohio, in the cases cited in the opinion on The Ohio Fuel Gas Company case, and therefore disallow any amount for going concern value, independent of that which appears in the undistributed overheads and the units applied.

Condition of Property

The company's witnesses in this case made actual observations of the property and applied a per cent condition to

the same. The Commission made no independent investigation of this property to determine the per cent condition and therefore accepts the per cent condition for each item of property fixed by the company's witnesses, which amounts to an average of 84.6781% for the total property excluding working capital, materials and supplies.

Depreciation Expenses

As depreciation expense I have allowed a rate of 2% of the Columbus property and applied that percentage against the value of the property, as determined herein, excluding land, working capital, materials and supplies and General Garage Equipment. The unexpended reserve for accrued depreciation amounted in 1929 to $1,140,527.25, with debits for the year of $47,086.92, which debits were practically all for abandonment of lines. All other replacements of property were taken care of through operating expenses.

I do not in any way consider that the reserve for accrued depreciation should balance at all times the actual depreciation figure which should be applied to the property, but can and do take into consideration the amount of unexpended reserve for accrued depreciation in fixing the annual charge to expenses for the item of depreciation, recognizing all the time there are certain unobserved factors of depreciation which must be taken care of in this allowance.

[fol. 277]

The depreciation on General Garage Equipment should be allowed and distributed through the operating expenses. In view of the fact that this highly depreciable property is handled in this way and of the extraordinary large reserve which has been accumulated, the amount allowed for depreciation is thoroughly adequate to meet the needs of the company. It compares favorably in dollar amount with the actual book figures of the company applicable to the City of Columbus.

Rate Case Expenses

No allowance should be made for rate case expense in this case. The federal case is not concluded, but the term of the rate has expired and any expense for litigation in regard to that rate case should not be considered in determining the reasonableness of the present rate. Likewise there is no rate case expense allowed in the present case

because of the fact that no company should be permitted to charge rate case expense where an increase in rate is not shown as justified by the litigation. If this were not the rule, it would be possible for a company, by continuous rate litigation to contantly increase, year after year, the rates charged to the consumers.

Other Expense Items

I have disallowed the expense item for clamps, being of the opinion, consistent with the finding of the Federal Court, that this is an item of capital expenses and has been heretofore included in the rate base. A portion of the business promotion expense representing salaries of $23,677.00 is disallowed. This expense more properly applies to the sale of appliances and there is no evidence in the case that the expenditure has resulted in an increased efficiency, a greater use or a lower cost for gas.

Under the decision of the Supreme Court in the Illinois Bell case this Commission is authorized to determine the [fol. 278] cost of the service rendered by the holding company to the subsidiary company. Company's Exhibit 77 shows the approximate cost of the service rendered to The Columbus Company to be $39,844.98, which amount is allowed as an item of expense rather than the 2½% item of gross income or the $17,644.45 contended for by the City.

A credit of $17,214.00 included by the company in its operating expenses for 1929 has been omitted as this item represents a correction of a 1928 charge which was erroneously classified and should have been properly charged to capital account. The amount should not therefore affect operating expenses for the year 1929. This coincides with the City's treatment of this item.

In regard to Other General Expenses, there is excluded the item for Home Service Department and Food Show Expense; the printing of 10,000 copies of "The Whys of the Gas Question"; expenses in the Federal Court in Cincinnati; the item in regard to refund on two script stock certificates and the cost of the appraisal of Franklin County Rural distribution plant service fees in tax matters for 1925, 1926 and 1928 and refunds on plans and specifications of city prison. Otherwise the account is allowed as claimed by the company.

In accordance also with the rate set-up herein made, deduction is made for recoveries on account of minimum charges of $21,990.00 and on account of discounts and penalties in the sum of $34,469.00.

In the consideration of these expenses it is noted that there has been an increase since 1924 in the total general administrative expenses from $33,623.00 to $101,298.00 in 1929; an increase in other general expenses from $76,231.00 in 1924 to $107,570.00 in 1929 and a total increase in expenses, excepting gas purchased, from $294,069.00 in 1924 to $584,144.00 in 1929. During this time the property was taken over and managed by The Columbia Engineering and Management Corporation and expenses incurred with the intent and purpose, according to the witnesses of the Company, of increasing the consumption of gas and decreasing [fol. 279] the cost of distribution. The result at least is not consistent with the purpose advocated.

Taxes

In the determination of the taxes allowed, I have reduced the property tax, real and personal, representing actual payments instead of accruals, in the amount of $4,612.00. Due to changes in expenses, a recomputation of other taxes results in the following credits being given to the company as a result of the earnings shown in the Commission's rate: Excise Taxes—$2,563.00; P. U. C. O. Taxes—$50.00; Federal Income Taxes—$22,644.00 or total net expenses allowed to the company in the sum of $25,570.00 more than shown by the company in its Exhibit No. 10.

Natural Gas Distributed

The total M. C. F. of gas sold for 1929 is accepted as claimed by the City as more nearly in agreement with verifications of the company's book figures. It is 176,856 M. C. F. less than claimed by the company.

There has been allowed as a loss for gas unaccounted for 5% of the gas actually distributed. This figure is fair because of the relatively high consumption of gas per customer per year.

Therefore including this 5% item for unaccounted for gas and applying the rate of 31.70¢ heretofore determined to be a reasonable allowance for cost of gas, there is allowed to The Columbus Gas and Fuel Company as a cost for gas at

the City gate, the sum of $1,887,805.00 for 5,955,221 M. C. F. purchased in 1929.

Rate of Return

The same rate of return should be allowed here as in the instance of the United Fuel and the Ohio Fuel case. The same basis as is reasonable for those companies should be for the Columbus Gas and Fuel Company.

The importance of the broadened investigation cannot be overestimated in that, while the only question at issue is whether or not the ordinance rate is just and fair to the Columbus company, the investigation and finding of the Commission as to the cost of producing and transmitting gas to the City gate may reflect upon what would be a just [fol. 280] price to be charged in other municipalities in the State of Ohio.

Many are of the opinion that it is a simple matter to drill a well and produce gas and distribute the same for public consumption and these persons are inclined to criticise any rate charge for this service without having a just conception of a legitimate reward that should be enjoyed by those who have had the foresight, the enterprise and the capital to make available this best of all fuels.

On the other hand it must not be forgotten that the company, enjoying the immunities of a public utility, has no right to impose upon the consumers a heavier burden than that which should be justly borne and that which will produce a proper rate of return, considering the value of the property devoted to this service.

Conclusion

I am hopeful that state regulation proves effective as a means of adjusting a rather fixed form of government established in the days of small business and rural communities to our complex and highly developed industrialized age. This Utilities Commission should at all times represent the public interest, with a full recognition of the fact that the utilities with their fixed capital and a fiduciary relation to their stockholders are definitely a part of that public, as is the individual consumer who pays for the service rendered. Our whole industrial fabric is built upon the service rendered by utilities and it would be a serious violation of the public trust for any member of any regulatory commission to

fix a rate which in his judgment did not give an adequate return to the company or which, on the other hand was higher than the value of the service or which provided more than a fair and reasonable return.

The present established theory of public utility regulation is based upon the fact that utility rates should not fluctuate as industrial costs move up and down on the economic scale, but the peaks of prosperity should be levelled down and the valleys of depression filled in, that there may be a con- [fol. 281] tinuous, efficient service returning a reasonable rate to the company.

I have conscientiously approached a solution of this rate investigation, mindful of these various elements. Another great danger to Commission regulation is the interminable delay incident to rate investigations. Such delay is neither fair to the public nor the utility. The very nature of utility regulation under our statute tends to draw out a case to an unreasonable time. The reproduction cost new theory less depreciation, itself is complicated, requiring much engineering investigation and resulting testimony.

In this case there were 11,000 pages of evidence introduced and 750 exhibits filed, many of them consisting of large volumes of figures and computations by expert witnesses. Briefs in the case totaled 1,000 pages, oral arguments were exhaustive and ably presented. The case was the most completely tried by engineering talent and able lawyers. When a case is so thoroughly presented it should be promptly decided by this Commission. Only by such prompt decision strictly in accordance with the facts and the law will utility regulation actually serve its purpose in our system of jurisprudence.

The valuation and calculation of expenses and the rate of return consistent therefor with the foregoing established rules and principles are shown on the attached sheets, marked Exhibit C and made a part of this opinion and results in a retail rate of a monthly minimum charge of 75¢ per consumer and a rate of 47.95¢ per thousand cubic feet of gas consumed.

It is apparent therefore that the rate fixed by council in Ordinance No. 645-29 is a just and reasonable rate, producing a fair return to the company upon the value of its property used and useful in rendering service in the City of

Columbus and the appeal of the company, should in my opinion therefore be dismissed.

I regret exceedingly that my colleagues and I have been unable to agree upon certain features of this case and the ultimate rate to be fixed and as a result that I must file this as an independent opinion.

John W. Bricker, Commissioner.

Dated at Columbus, Ohio, Oct. 3, 1932.

[fol. 282] EXHIBIT "A"

The Columbus Gas & Fuel Company—Formal Case No. 5935

United Fuel Gas Company—River Rate

Valuation: Property devoted to the service of other than Domestic and Manufacturing customers in West Virginia, exclusive of Distribution System property and the proportion of General Property applicable thereto, as of 12-31-29			Portion Allocable to Ohio Fuel Gas Co. on M. C. F. Sales Basis
roductive System:			
Land	1,234	.....	447
Rights of Way	214,340	.....	77,648
Plant & General Overheads	14,207,333	.....	5,146,805
Total		14,422,907	5,224,900
Transmission System:			
Land	16,270		5,894
Rights of Way	294,725		106,768
Plant and General Overheads	14,206,244		5,146,411
Total		14,517,239	5,259,073
General Property:			
Land	145,205		52,603
Plant & General Overheads	538,635		195,128
Total		683,840	247,731
Total Physical Property		29,623,986	10,731,704
Leaseholds		6,796,213	2,462,023
Working Capital and Materials & Supplies		1,001,913	362,957
Total Property Used & Useful		37,422,112	13,556,684

Expenses and Return on Investment:			
Proportion applicable to the above property for 1929.			
Gas Purchased for Resale		1,520,431	550,798
Production Expense		832,524	301,594
Transmission Expense		942,507	341,436
General Expense		407,491	147,619
Taxes		893,788	323,787
Interdepartmental		(red) 329,362	(red) 119,316
Depreciation & Amortization		906,437	328,370
Return @ 6½%		2,432,437	881,184
Total Expenses & Return		7,606,253	2,755,472
M. C. F. of Gas Sold:			
Proportion applicable to the above property for 1929.			
Wholesale Sales		39,536,161	15,486,218
Retail Sales—Ohio	1,352,473	.....	.....
Retail Sales—Kentucky	1,859,807	3,212,280	.....
Total M. C. F. of Gas Sold		42,748,441	15,486,218
River Rate Per M. C. F.			
Derived by dividing the Total Expenses & Return by the Total M. C. F. of Gas Sold		17.79¢	17.79¢

[fol. 283]

EXHIBIT "B"

The Columbus Gas & Fuel Company—Formal Case No. 5935

The Ohio Fuel Gas Company—Gate Rate

Sheet 1

Valuation:		Portion applicable to Cols. Gas & Fuel Co. on M. C. F. Sales Basis
Property devoted to the service of Columbus, Ohio, and other cities in Ohio and Indiana, exclusive of Distribution System property and the proportion of General Property applicable thereto, as of 12-31-29.		
Production System	13,062,691	1,451,882
Transmission System	41,584,269	4,621,976
General Property	1,089,344	121,078
General Overheads	7,803,083	867,291
Total Physical Property	63,539,387	7,062,227
Leaseholds	7,284,900	809,696
Working Capital and Materials & Supplies	1,700,000	188,950
Total Property Used & Useful	72,524,287A	8,060,873

Expenses and Return on Investment:		
Proportion applicable to above property for 1929.		
Purchased Gas—from U. F. G. Co. @ 17.79¢ per M. C. F.	2,754,998	306,210
Purchased Gas—from Others	2,873,056	319,332
Purchased Gas Expense	89,747	9,975
Production Expenses	1,288,589B	143,223
Non-Productive Well Drilling Expenses	618,789	68,777
Transmission Expenses	1,401,668B	155,792
General Administrative Expenses	392,161B	43,588
Other General Expenses	199,346B	22,157
Taxes	1,669,492B	185,559
Credits	(red) 782,358	(red) 86,957
Depreciation & Amortization	1,765,607	196,242
Return @ 6½%	4,714,079	523,957
Total Expenses & Return	16,985,174	1,887,855
M. C. F. of Gas Sold:		
Proportion applicable to the above property for 1929	53,579,575	5,955,221
Gate Rate per M. C. F.		
Derived by dividing the Total Expenses and Return by the Total M. C. F. of Gas Sold	31.70¢	31.70¢

NOTE;

A—Detail of Valuation shown on Sheet 2.
B—Detail of Expenses shown on Sheets 3 and 4.

[fol. 284] Sheet 2

Detail of Valuation as of 12-31-29

	Production System Property:	Reproduction value	Per cent condition	Present value
204	Land	20,514	100.0000	20,514
206	Rights of Way	115,508	100.0000	115,508
208	Gas Well Structures	343,382	80.0001	274,706
210	Other Production System Structures	162,136	85.9772	139,400
211	Gas Well Construction	14,192,077	41.8874	5,944,692
212	Gas Well Equipment	9,715,175	41.8874	4,069,434
213	Field Line Construction	704,068	85.0000	598,458
214	Field Line Equipment	1,784,716	85.0000	1,517,009
216	Drilling & Cleaning Equipment	540,256	70.0000	378,179
217	Other Production System Equipment	5,612	85.3706	4,791
	Total	27,583,444	47.3570	13,062,691
	Transmission System Property:			
218	Land	67,818	100.0000	67,818
220	Rights of Way	1,797,299	100.0000	1,797,299
221	Compressor Station Structures	1,076,486	84.3126	907,613
222	Transmission System Measuring Station Structures	129,629	79.9998	103,703
223	Other Transmission System Structures	234,167	81.1382	189,999
224	Compressor Station Equipment	6,294,007	84.2072	5,300,007
225	Transmission System Measuring Station Equipment	496,891	90.0002	447,203
226	Transmission Line Equipment	39,547,879	82.5000	32,627,000
227	Other Transmission System Property	168,708	85.1335	143,627
	Total	49,812,884	83.4810	41,584,269

		Reproduction value	Per cent condition	Present value
	General Property:			
244	General Office Land	108,906	100.0000	108,906
245	Other General Land	2,757	100.0000	2,757
247	General Office Structures	284,045	97.0001	275,524
248	Other General Structures	81,595	79.6385	64,981
249	General Office Equipment	132,145	87.8588	116,101
251	General Shop Equipment	104,477	79.7640	83,335
256	General Tools & Equipment			
253	General Garage Equipment	367,339	82.0868	301,537
254	General Laboratory Equipment	11,201	70.4491	7,891
255	General Telephone & Telegraph Equipment	173,529	73.9427	128,312
	Total	1,265,994	86.0465	1,089,344
	General Overheads:			
258 to 266	Undistributed Construction Expenditures	11,012,725	70.8551	7,803,083
	Total Physical Property	89,675,047	70.8551	63,539,387
	Leaseholds	7,284,900	100.0000	7,284,900
	Working Capital and Materials & Supplies	1,700,000	100.0000	1,700,000
	Total Property Used & Useful	98,659,947	73.5094	72,524,287

[fol. 285] Sheet 3

Detail of Expenses for 1929

	Production Expenses:	
350	Superintendence Labor	49,293
351	Gas Well & Field Line Labor	392,672
353	Other Production System Labor	30,353
353½	Land & Map Department Labor	80,414
354	Superintendence Supplies & Expenses	4,342
355	Gas Well & Field Line Supplies & Expenses	69,263
357	Production System Rent	3,353
358	Other Production System Supplies & Expenses	9,016
358½	Land & Map Department Supplies & Expenses	13,036
359	Gas Well Royalties	538,206
362	Maintenance of Other Production System Structures	1,589
363	Maintenance of Gas Well Equipment	53,868
367	Maintenance of Drilling & Cleaning Equipment	40,454
368	Maintenance of Other Production System Equipment	2,730
	Total	1,288,589
	Transmission Expenses:	
371	Superintendence Labor	48,465
372	Compressor Station Labor	349,705
373	Measuring Station Labor	19,888
374	Transmission Line Labor	180,253
375	Other Transmission System Labor	24,366
376	Superintendence Supplies & Expenses	5,679
377	Compressor Station Supplies & Expenses	68,729
378	Measuring Station Supplies & Expenses	10,592
379	Transmission Line Supplies & Expenses	53,963
380	Transmission System Rent	133,860
381	Other Transmission System Supplies & Expenses	4,307
382	Maintenance of Compressor Station Structures	22,543
383	Maintenance of Other Transmission System Structures	1,108

384	Maintenance of Compressor Station Equipment	140,043
385	Maintenance of Transmission Line Equipment	317,237
386	Changing Transmission Lines	4,681
387	Maintenance of Measuring Station Equipment	15,751
388	Maintenance of Other Transmission System Equipment	498
	Total	1,401,668

[fol. 286]

Sheet 4

Detail of Expenses for 1929

	General Administrative Expenses:	
427	Salaries of General Officers	11,008
427½	Operating & Engineering Service Fees	186,736
427	Salaries of General Office Clerks	102,342
429	General Office Stationery & Printing	5,392
430	Other General Office Supplies	2,989
431	General Officers' Expenses	5,436
432	General Office Clerks' Expenses	3,425
433	General Law Expenses	40,608
434	General Office Rent	17,800
435	Other General Office Expenses	15,498
437	Maintenance of General Office Equipment	927
	Total	392,161
	Other General Expenses:	
442	Laboratory Labor	352
443	Telephone & Telegraph System Labor	3,383
448	Laboratory Supplies & Expenses	2,213
449	Telephone & Telegraph System Supplies & Expenses	1,819
454	Injuries & Damages	63,600
455	Other Insurance	22,222
455½	Employees' Group Insurance	13,600
456	Relief & Pensions	35,912
457	Other General Expenses	55,758
458	Inventory Adjustment	1,229
459	Discounts on Materials & Supplies (red)	4,709
473	Maintenance of Telephone & Telegraph System	3,967
	Total	199,346
	Taxes:	
	Property Tax	857,794
	Ohio Excise Tax	229,300
	Ohio Public Utilities Commission Tax	8,706
	Federal Income Tax	573,692
	Total	1,669,492

[fol. 287]

EXHIBIT "C"

The Columbus Gas & Fuel Company—Formal Case No. 5935

The Columbus Gas & Fuel Company—Retail Rate

Sheet 1

Valuation:		
Property devoted to the service of the public within the City of Columbus, Ohio, as of 12-31-29.		
Distribution System		3,252,344
General Property		238,898
General Overheads		436,405
Total Physical Property		3,927,647
Working Capital and Materials & Supplies		100,000
Total Property Used & Useful		4,027,647A
Expenses and Return on Investment:		
Proportion applicable to above property for 1929.		
Purchased Gas—from Ohio Fuel Gas Company @ .31.70¢ per M. C. F. (5,955,221)		1,887,805
Purchased Gas Expense		1,078
Distribution Expenses		120,611B
Utilization Expenses		28,866B
Commercial Expenses		108,799B
Business Promotion Expenses		23,762B
General Administrative Expenses		56,263B
Other General Expenses		68,524B
Taxes		150,317B
Minimum Charges	(red).	21,990
Discounts & Penalties	(red).	34,469
Depreciation		68,196
Return @ 6½%		261,797
Total Expenses & Return		2,719,559
M. C. F. of Gas Sold:		
Proportion applicable to above property for 1929		5,671,639
Retail Rate per M. C. F.:		
Derived by dividing the Total Expenses & Return by the total M. C. F. of Gas Sold		47.95¢

NOTE:

A—Detail of Valuation shown on Sheet 2.
B—Detail of Expenses shown on Sheets 3 and 4.

[fol. 288] Sheet 2

Detail of Valuation as of 12-31-29

		Reproduction value	Per cent condition	Present value
	Distribution System Property:			
228	Land	23,550	100.0000	23,550
230	Rights of Way	5,072	100.0000	5,072
231	District Regulator Structures	10,698	89.7457	9,601
232	Other Distribution System Structures	14,868	98.3992	14,630
233	Gas Receivers & District Regulators	31,300	96.1502	30,095
234	Distribution Line Equipment	2,768,637	83.0391	2,299,051
235	Service Line Equipment	515,666	77.3000	398,610
236	Meters	458,902	95.6272	438,835
237	Meter Installations			
238	House Regulators	16,957	84.9973	14,413
239	Other Distribution System Equipment	18,990	97.3512	18,487
	Total	3,864,640	84.1565	3,252,344
	General Property:			
245	Other General Land	52,380	100.0000	52,380
248	Other General Structures	102,153	99.6897	101,836
249	General Office Equipment	33,902	86.8179	29,433
251	General Shop Equipment	18,684	84.2325	15,738
256	General Tools & Implements			
253	General Garage Equipment	51,197	77.1744	39,511
	Total	258,316	92.4829	238,898
	General Overheads:			
258 to 266	Undistributed Construction Expenditures	515,370	84.6781	436,405
	Total Physical Property	4,638,326	84.6781	3,927,647
	Working Capital and Materials & Supplies	100,000	100.0000	100,000
	Total Property Used & Useful	4,738,326	85.0015	4,027,647

[fol. 289] Sheet 3

Detail of Expenses for 1929

	Distribution Expenses:	
389	Superintendence Labor	10,713
390	Distribution Line Labor	6,653
391	Labor Removing & Resetting Meters	14,037
392	Labor Inspecting & Testing Meters	256
393	Other Meter Department Labor	2,149
394	Other Distribution System Labor	4,498
395	Superintendence Supplies & Expenses	885
396	Distribution Line Supplies & Expenses	7,651
397	Meter Department Supplies & Expenses	15,733
398	Distribution System Rent	1,672
399	Other Distribution System Supplies & Expenses	4,893
400	Maintenance of Distribution Structures	277
401	Maintenance of Distribution Lines	12,871
402	Changing Distribution Lines	731
403	Maintenance of Service Lines	14,362

404 Maintenance of Meters		17,698
405 Maintenance of House Regulators		36
406 Maintenance of Gas Receivers & District Regulators		4,577
407 Maintenance of Other Equipment		919
Total		120,611
Utilization Expenses:		
411 Customers Premises Labor		23,137
415 Customers Premises Supplies & Expenses		5,729
Total		28,866
Commercial Expenses:		
420 Operating Labor		87,332
421 Operating Supplies & Expenses		21,467
Total		108,799
Business Promotion Expenses:		
422 Salaries & Wages		6,711
424 Supplies & Expenses		17,051
Total		23,762

[fol. 290] Sheet 4

Detail of Expenses for 1929

General Administrative Expenses:		
427 Salaries of General Officers		2,989
427½ Operating & Engineering Service Fees		39,845
428 Salaries of General Office Clerks		4,538
429 General Office Stationery & Printing		1,743
430 Other General Office Supplies		205
431 General Officers' Expenses		653
432 General Office Clerks' Expenses		21
433 General Law Expenses		2,356
434 General Office Rent		1,204
435 Other General Office Expenses		2,588
437 Maintenance of General Office Equipment		121
Total		56,263
Other General Expenses:		
443 Laboratory Supplies & Expenses		470
452 Uncollectible Accounts		6,066
454 Injuries & Damages		25,568
455 Insurance		4,439
455½ Employees' Group Insurance		2,091
456 Relief & Pensions		5,306
457 Other General Expenses		28,181
458 Inventory Adjustments		69
459 Discount on Merchandise Purchased	(red)	1,865
460 Gas Used by Company	(red)	1,801
Total		68,524
Taxes:		
Property Tax		89,565
Ohio Excise Tax		36,714
Ohio Public Utilities Commission Tax		1,394
Federal Income Tax		22,644
Total		150,317

[fol. 291] Copy

Filed Nov. 1, 1932

BEFORE PUBLIC UTILITIES COMMISSION OF OHIO

No. 5935

[Title omitted]

APPLICATION BY PETITION FOR REHEARING

Now comes The Columbus Gas and Fuel Company and makes application for rehearing on the Commission's finding and order in the above entitled proceeding entered upon the records of the Commission October 3, 1932.

This applicant considers said finding and order to be unreasonable and unlawful upon each of the following grounds, separately, to-wit:

(1) Said finding and order, and each of them, are contrary to law, are not supported by the evidence, are contrary to the evidence and against the weight of the evidence, and are unreasonable, unlawful and manifestly in error and will deprive applicant of its property without due process of law and deny to applicant the equal protection of the law, and would therefore be repugnant to the Fourteenth Amendment of the Constitution of the United States.

(2) The rate and charge so fixed by the Commission for the furnishing of natural gas service by The Columbus Gas and Fuel Company for public and private consumption in the City of Columbus, Ohio, are confiscatory and deprive applicant of its property without due process of law and deny to applicant the equal protection of the law, contrary to the provisions of Section one of Article Fourteen of the Articles in Addition to and Amendment of the Constitution of the United States. It is the contention of the applicant that each and all of the grounds which applicant [fol. 292] has set out in this application for rehearing, which are hereby adopted as if fully repeated here, both separately and collectively deprive applicant of its property without due process of law and deny to applicant the equal protection of the law, contrary to said provisions of said Fourteenth Amendment.

(3) The Commission erred in admitting, receiving and/or relying upon the evidence, or any part thereof, of the witness Harry R. Allensworth for the reason that said Allensworth did not possess the necessary training, education and/or experience which gave him any peculiar knowledge in respect of the subjects and matters to which he testified.

(4) The Commission erred in overruling the objections to the testimony and exhibits introduced by and through the witness Harry R. Allensworth.

(5) The Commission erred in overruling the objections to the testimony and exhibits introduced by and through the witness Philip Burgess and especially to that testimony and those exhibits of said Burgess which were predicated upon the testimony and exhibits of the witness Harry R. Allensworth.

(6) The Commission erred in admitting, receiving and/or relying upon the evidence, or any part thereof, of the witness J. Paul Blundon for the reason that said Blundon did not possess the necessary training, education and/or experience which gave him any peculiar knowledge in respect of the subjects and matters to which he testified.

(7) The Commission erred in overruling the objections to the testimony and exhibits introduced by and through the witness J. Paul Blundon, and especially to that testimony and those exhibits of said Blundon which were predicated upon the testimony and exhibits of the witness Harry R. Allensworth.

(8) The Commission erred in refusing to consider competent and relevant evidence tending to show that there is a market for gas leaseholds and tending to show the value of such leaseholds in such market.

[fol. 293] (9) The Commission erred in refusing to admit and consider Company Exhibit No. 140, which was a written offer from Benedum-Trees Oil Company of Thirty Million Dollars cash for the gas leaseholds of The Ohio Fuel Gas Company (Record, p. 3314).

(10) Said finding and order are based upon evidence received in the absence of applicant and without notice to

applicant, and with no opportunity for applicant to cross-examine the witness or witnesses producing such evidence.

(11) The Commission failed to fix and determine the just and reasonable rate to be charged and collected by applicant for its natural gas during the period fixed by the ordinance appealed from.

(12) The rate so fixed is insufficient to yield applicant reasonable compensation for the service.

(13) The rate so fixed does not give due regard to the value of applicant's property actually used and useful for the convenience of the public and to the necessity of making reservations from income for surplus, depreciation and contingencies and such other matters as may be proper.

(14) The rate and charge so fixed does not give due regard to the gateway contract (Company Exhibit No. 11) existing between The Columbus Gas and Fuel Company and The Ohio Fuel Gas Company whereunder The Columbus Gas and Fuel Company receives its supply of natural gas.

(15) The finding and order of the Commission in respect of the amount to be paid by The Columbus Gas and Fuel Company to The Ohio Fuel Gas Company for natural gas at the Columbus gateways violates Section ten of Article One of the Constitution of the United States by impairing the obligation of the contract, Company Exhibit No. 11, entered into as of the first day of July, 1929, between The Columbus Gas and Fuel Company and The Ohio Fuel Gas Company.

[fol. 294] (16) The finding and order of the Commission in respect of the amount to be paid by The Columbus Gas and Fuel Company to The Ohio Fuel Gas Company for natural gas at the Columbus gateways violates Section ten of Article One of the Constitution of the United States by impairing the obligations of the contract, Company Exhibit No. 58, made on the 31st day of October, 1927 by and between United Fuel Gas Company and The Ohio Fuel Gas Company.

(17) The finding and order of the Commission in respect of the amounts to be paid by The Columbus Gas and Fuel Company to The Ohio Fuel Gas Company for natural gas

at the Columbus gateways is repugnant to the power given to Congress by Section eight of Article One of the Constitution of the United States to regulate commerce among the several states, in that an attempt is thereby made to regulate the price for natural gas to be paid by The Ohio Fuel Gas Company to United Fuel Gas Company for natural gas produced in the states of West Virginia and Kentucky and transported in interstate commerce from points in the state of West Virginia to the gateway at Columbus, Ohio, where it is delivered by The Ohio Fuel Gas Company to The Columbus Gas and Fuel Company.

(18) The rate of return of 6.5 per centum per annum allowed to The Columbus Gas and Fuel Company is insuffcient and confiscatory as a return upon an admittedly hazardous undertaking.

(19) The rate and charge so fixed by the Commission for the furnishing of natural gas service by The Columbus Gas and Fuel Company for public and private consumption in the City of Columbus, Ohio, will not permit a return to said Company on the value of the rate base found by the Commission for said Company's property of more than 4.86 per centum per annum. The rate base so found for the used and useful property of The Columbus Gas and Fuel Company is $4,027,647.00. The net income available for return under the Commission's allowances for operating expenses and other charges made by the Commission is the sum of $195,899.00.

(20) The rate and charge so fixed by the Commission for the furnishing of natural gas service by The Columbus Gas and Fuel Company for public and private consumption in the City of Columbus, Ohio, do not allow either, any two [fol. 295] or all of said The Columbus Gas and Fuel Company, The Ohio Fuel Gas Company or United Fuel Gas Company an annual return of 6.5 per centum on the respective rate bases of said companies found, allowed and ordered by the Commission.

(21) The Commission erred in crediting the minimum charges of The Columbus Gas and Fuel Company twice; that is, the Commission deducted $43,980.00 minimum charges, whereas the only evidence in this proceeding (page 9 of City Exhibit No. 69) shows the total amount of minimum charges to have been $21,989.96.

(22) If the Commission had taken its total allowance to The Columbus Gas and Fuel Company for operating expenses, taxes and return and correctly computed the Commission's own allowances, without a duplication of the minimum charges credit, the Commission would have arrived at a rate of 55.46 cents per thousand cubic feet.

(23) The Commission erred in deducting discounts and penalties and minimum charges before calculating the allowance to The Columbus Gas and Fuel Company for excise taxes. The laws of this state require excise taxes to be paid on the entire gross receipts of a natural gas company, which term "gross receipts" is defined in Section 5417 of the General Code of Ohio.

(24) The Commission erred in using the rate of 1.35 per centum as the rate to be allowed to The Columbus Gas and Fuel Company for excise tax, whereas the excise tax rate in effect at the time of the finding and order was and will be throughout the term of the ordinance 2.35 per centum.

(25) The Commission erred in its computation of the public utilities tax to be paid by The Columbus Gas and Fuel Company.

(26) The Commission erred both in the rate and method of computing the income tax of The Columbus Gas and Fuel Company. The Commission allowed a rate of 12 per centum instead of 13¾ per centum, and in computing the tax deducted as a credit bond and other interest paid by the Company but not allowed by the Commission as expenses.

[fol. 296] (27) The Commission erred in its computation of the rate to be charged by The Columbus Gas and Fuel Company for natural gas within the City of Columbus in duplicating the credit to operating expenses for minimum charges, in applying an incorrect rate for excise taxes to an incorrect amount of gross receipts, in applying the public utilities tax to an incorrect amount of gross receipts and in applying an incorrect rate for Federal income tax to an incorrect amount of net income. If the Commission had taken only the proper credit for minimum charges, and had correctly computed the excise and public utilities taxes on gross receipts as required by law and allower the proper rate for Federal income tax without deducting any credit

on account of bond or other interest not allowed as an expense, the Commission would have arrived at a rate of 56.38 cents per thousand cubic feet.

(28) The Commission failed to allow The Columbus Gas and Fuel Company proper and adequate annual charges for depreciation of the several classes of its property over and above the cost and expense of maintenance to keep its property in a state of efficiency corresponding to the progress of the art or industry and necessary for the purpose of renewing, restoring, replacing and/or substituting depreciated property in order to keep the plant in a state of efficiency.

(29) In computing the allowance for depreciation on the property of The Columbus Gas and Fuel Company, errors have been made in failing to consider depreciable property valued by the Commission itself at $421,341.00 which, if corrected, will result in an annual allowance to The Columbus Gas and Fuel Company of $56,881.00 instead of $51,154.00.

(30) The Commission erred in allowing only 1.5 per centum for depreciation, amounting to $51,154.00, when according to the only competent evidence submitted in this proceeding this allowance should have been not less than 4 per centum or $174,880.00 for The Columbus Gas and Fuel Company.

(31) The Commission erred in not allowing depreciation on overheads applicable to those items of property which are depreciated in the valuation of The Columbus Gas and Fuel Company.

[fol. 297] (32) There is no evidence to support the finding and order of the Commission reducing the annual allowance to The Columbus Gas and Fuel Company for depreciation to the sum of $51,154.00 in the face of the fact that it was conceded by the City of Columbus in City Exhibit No. 69 that the Company was entitled to an annual depreciation allowance of at least $88,695.03.

(33) The Commission erred in allowing only 5 per centum for line loss, there being no competent evidence offered to show that the line loss of The Columbus Gas and Fuel Company was less than 6.5 per centum.

(34) The Commission erred in adopting a fictitious figuse of 5,671,639 M. c. f. as being the amount of gas sold by The Columbus Gas and Fuel Company inside the city of Columbus for the calendar year 1929, when the same should be 5,848,495 M. c. f.

(35) The Commission erred in holding that the so-called collar leak clamps had been valued in the cost of reproduction of The Columbus Gas and Fuel Company. The undisputed evidence shows this to be an item of maintenance and the allowance for Account No. 401 should have been for $50,856.82 instead of $12,871.00. City Exhibit No. 69 claims that the expense of these clamps should have been amortized over a five year period and allows $22,582.73 per year as against the Commission's allowance of $12,871.00 per year.

(36) The Commission erred in deducting $23,676.90 from Account No. 422 of The Columbus Gas and Fuel Company, being the salaries paid to appliance salesmen for load building purposes, and resulting in the substitution of the judgment of the Commission for that of the Company in a matter of business management.

(37) The Commission erred in eliminating the sum of $6,021.48, or any part thereof, from Account No. 457 of The Columbus Gas and Fuel Company on account of home service department expenses. This amounted to a substitution of the judgment of the Commission for that of the responsible officers of the Company on a question of management.

[fol. 298] (38) The Commission erred in refusing to allow anything for rate case expense to The Columbus Gas and Fuel Company on the ground that this case had gone far afield. The only reasons for this case going at all afield were the sustaining by the Commission of the City's motions to bring in the valuations of The Ohio Fuel Gas Company and the United Fuel Gas Company and the preparation by The Columbus Gas and Fuel Company of many exhibits for the City of Columbus.

(39) The Commission erred in allowing to The Columbus Gas and Fuel Company only $120,611.00 Distribution System Expense, when the same should have been not less than $158,749.00.

(40) The Commission erred in fixing the cost of distribution of natural gas within the City of Columbus by The Columbus Gas and Fuel Company at 16 cents instead of 26.86 cents.

(41) The Commission erred in fixing the price of natural gas which The Columbus Gas and Fuel Company may pay to The Ohio Fuel Gas Company at 39.022 cents instead of at not less than 45 cents, as fixed by the contract, Company Exhibit No. 11.

(42) The Commission erred in fixing the rate for natural gas which may be charged by The Columbus Gas and Fuel Company at the consumer's meter in the City of Columbus at 55 cents, instead of fixing it at not less than 69.59 cents.

(43) The Commission erred in finding, holding and/or ordering that the rates and charges fixed in said order are just and reasonable for the furnishing of natural gas service by The Columbus Gas and Fuel Company for public and private consumption in the City of Columbus, Ohio, whereas the same are altogether unjust and unreasonable.

(44) The Commission erred in finding, holding and/or ordering

"the value of the several kinds and classes of property of The Columbus Gas and Fuel Company, used and useful for the convenience of the public in the furnishing of natural gas service for public and private consumption in the City of Columbus and of said properties as a whole, as of December 31st, 1929, to be the sum of $4,029,647.00, as more fully set forth in Exhibit 'C' appended to the finding of facts filed herein, which exhibit hereby is made a part of this entry by adoption, as fully as if the same were here set forth in its entirety."

[fol. 299] (45) The Commission erred in finding, holding and/or ordering

"That the reasonable costs and expenses of The Columbus Gas and Fuel Company for the furnishing of its natural gas service to consumers within the City of Columbus, Ohio, based upon a consumption of 5,671,639,000 cubic feet of natural gas for the calendar year ended December 31st, 1929, were as set forth in Exhibit 'C', Sheet 1, appended

to the finding of facts filed herein, which Exhibit hereby is made a part of this order by adoption."

(46) The Commission erred in finding, holding and/or ordering

"That the rate per thousand cubic feet of 55¢, with an additional charge of 5¢ per thousand cubic feet, if monthly bills are not paid within a fixed time, and a monthly minimum charge of 75¢, without discount, are just and reasonable rates and charges for the service furnished and supplied by said appellant in the City of Columbus, Ohio."

(47) The Commission erred in finding, holding and/or ordering

"That the gross and net revenues derived by said The Columbus Gas and Fuel Company for furnishing natural gas for public and private consumption, in the City of Columbus, at the rates and charges hereinbefore found by the Commission to be just and reasonable will be sufficient to yield said The Columbus Gas and Fuel Company a reasonable compensation for such service."

(48) The Commission erred in ordering

"That the rates and charges hereinbefore set forth which are found and determined by this Commission to be just and reasonable for the furnishing of natural gas service by The Columbus Gas and Fuel Company for public and private consumption in the City of Columbus, be, and hereby they are substituted for the rates and charges fixed by said Ordinance, which the Commission has found to be unjust and unreasonable, and the Commission having made inquiry and investigation with respect to the ablity of said The Columbus Gas and Fuel Company to furnish natural gas for public and private consumption in the City of Columbus, as fixed by said Ordinance, and having found that said The Columbus Gas and Fuel Company will be able to furnish its said product in said City for said period, it is therefore further,

Ordered, That the rates and charges not greater than or in excess of the rates and charges for the furnishing of natural gas to the City and private consumers, and to the public buildings, grounds, streets, alleys and market places

in the City of Columbus, Ohio, for public and private consumption, which the Commission herein has found to be just and reasonable, be, and remain in force and effect for a period of five years from and after the effective date of the Ordinance herein complained of and appealed from, and said The Columbus Gas and Fuel Company hereby is notified, directed and required to furnish its product to its consumers thereof, public and private, in the City of Columbus, Ohio, for said period."

[fol. 300] (49) Concurrently with the filing of this application for rehearing, The Columbus Gas and Fuel Company has filed a protest to the valuations found by the Commission in its finding and order in this proceeding of October 3, 1932, and hereby adopts, and requests the Commission to consider as if herein specifically set out, and as separate grounds upon which applicant considers the finding and order of October 3, 1932, to be unreasonable and unlawful and as a part of this application for rehearing, each and all of the separate grounds of said protest.

The Commission erred in fixing the gate rate to be paid by The Columbus Gas and Fuel Company to The Ohio Fuel Gas Company in the following particulars set forth in grounds 50 to 90 inclusive, to-wit (each separately):

(50) The Commission disregarded the agreement made as of the first day of July, 1929, between The Ohio Fuel Gas Company and The Columbus Gas and Fuel Company (being Company Exhibit No. 11), in the face of the evidence:

(a) that The Ohio Fuel Gas Company charged other unrelated companies in the state of Ohio greater prices at the city gate, which greater prices have been allowed by this Commission in recent rate cases;

(b) that gate rates charged by other companies in the state of Ohio were higher than the rate fixed in said contract (Company Exhibit No. 11), as shown by Company Exhibits 13 and 13-A;

(c) that the combined income available for amortization, depreciation and dividends of The Ohio Fuel Gas Company, The Columbus Gas and Fuel Company and The Federal Gas and Fuel Company amounted to 7.99 per centum on the com-

bined fixed capital of said companies as shown by the books of the respective companies;

(d) that the combined income available for amortization, depreciation and dividends of The Ohio Fuel Gas Company, The Northwestern Ohio Natural Gas Company, The Columbus Gas and Fuel Company, The Federal Gas and Fuel Company, The Springfield Gas Company and the Edgewater Gas & Light Company (being all of the companies known as the Columbus Group) amounted to 7.90 per centum on the combined fixed capital of said companies as shown by the books of the respective companies;

(e) that the United Fuel Gas Company charged to the Hope Natural Gas Company, an unrelated company, a price equal to the price charged by United Fuel Gas Company to The Ohio Fuel Gas Company for similar quantities of gas as shown by Company Exhibit No. 59.

[fol. 301] (f) that the State and Federal Courts in West Virginia, as well as the Public Service Commission of West Virginia, have forbidden the United Fuel Gas Company from discriminating in favor of a related company as against an unrelated company. As shown by Company Exhibit No. 59, the charge to the Hope Natural Gas Company amounts to an average of more than 26½ cents per M c. f.

(51) The Commission is and was without any authority to make any finding, decision or order in the above entitled complaint and appeal in respect of the value of the property of The Ohio Fuel Gas Company.

(52) The Commission is and was without any authority to make any finding, decision or order in the above entitled complaint and appeal in respect of the value of the property of United Fuel Gas Company.

(53) The Commission is and was without any authority to make any finding, decision or order in the above entitled complaint and appeal in respect of the operating expenses, rate of return or price charged for natural gas by The Ohio Fuel Gas Company.

(54) The Commission is and was without any authority to make any finding, decision or order in the above entitled complaint and appeal in respect of the operating expenses,

rate of return or price charged for natural gas by United Fuel Gas Company.

(55) The value found of the property of said The Ohio Fuel Gas Company is contrary to the evidence in the above entitled proceeding and, if permitted to stand, will result in preventing said applicant from paying to said The Ohio Fuel Gas Company a reasonable and/or fair price for natural gas at the Columbus gateway.

(56) The value found of the property of said United Fuel Gas Company is contrary to the evidence in the above entitled proceeding, and, if permitted to stand, will result in preventing said The Ohio Fuel Gas Company from paying to said United Fuel Gas Company a reasonable and/or fair price for natural gas.

(57) If said valuation, finding and order should be held to be binding upon The Ohio Fuel Gas Company, then said valuation, finding and order will deprive said The Ohio Fuel Gas Company of its property without due process of [fol. 302] law, and deny to said company the equal protection of the law, and would therefore be repugnant to the Fourteenth Amendment of the Constitution of the United States.

(58) If said valuation, finding and order should be held to be binding upon United Fuel Gas Company, then said valuation, finding and order will deprive said United Fuel Gas Company of its property without due process of law, and deny to said company the equal protection of the law, and would therefore be repugnant to the Fourteenth Amendment of the Constitution of the United States.

(59) The Commission failed to allow as a part of the compensation to be paid The Ohio Fuel Gas Company proper and adequate annual charges for depreciation of the several classes of its property over and above the cost and expense of maintenance to keep its property in a state of efficiency, corresponding to the progress of the art or industry and necessary for the purpose of renewing, restoring, replacing and/or substituting depreciated property in order to keep the plant in a state of efficiency.

(60) The Commission failed to allow to The Ohio Fuel Gas Company either depreciation or amortization on the property in Accounts Nos. 206 and 220—Rights of Way.

(61) The Commission failed to make any annual allowance to The Ohio Fuel Gas Company for depreciation or amortization on Undistributed Construction Expenditures (Overheads)—Accounts 258 to 266, inclusive, although in arriving at the present value of said Undistributed Construction Expenditures the Commission made a deduction for observed depreciation.

(62) The Commission failed to allow as a part of the compensation to be paid The Ohio Fuel Gas Company proper and adequate annual charges for amortization of the property of The Ohio Fuel Gas Company necessary to insure a return to the stockholders of said company of their investment.

(63) The Commission failed to allow to The Ohio Fuel Gas Company a reserve for amortization on any property other than No. 1 Leaseholds, Gas Well Construction and Gas Well Equipment.

[fol. 303] (64) The Commission allowed The Ohio Fuel Gas Company only $4,158,954.00 for amortization, whereas the only competent evidence in this proceeding showed that the amount to be allowed should not have been less than $5,449,221.00.

(65) The finding of the Commission requires this amortization to be kept in a revolving fund. Such revolving fund should have been based upon a valuation at least sufficient for the period for which the Commission requires The Columbus Gas and Fuel Company to render service under said ordinance.

(66) The Commission disregarded the agreement made on the 31st day of October, 1927 by and between United Fuel Gas Company and The Ohio Fuel Gas Company (being Company Exhibit No. 58) in the face of the evidence:

(a) that United Fuel Gas Company charged the Hope Natural Gas Company, an unrelated company, a price equal to the price charged by United Fuel Gas Company to The Ohio Fuel Gas Company for similar quantities of gas at similar points of delivery, as shown by Company Exhibit No. 59;

(b) that the State and Federal Courts in West Virginia, as well as the Public Service Commission of West Virginia, have forbidden the United Fuel Gas Company from discriminating in favor of a related company as against an unrelated company.

The foregoing action of the Commission resulted in allowing in the expense of The Ohio Fuel Gas Company only $3,413,162.00 for gas purchased from United Fuel Gas Company, when the amount should have been $4,172,362.00.

(67) The Commission refused to allow the sum of $1,684,913.00, or any other sum, in Account No. 360 for lease rentals paid by The Ohio Fuel Gas Company. The Commission also refused to allow any return on the value of the property on which lease rentals were and are paid. If The Ohio Fuel Gas Company must pay its lease rentals out of its return on property other than said leaseholds, such return on the valuation of The Ohio Fuel Gas Company's property found by the Commission in this proceeding will be reduced to an annual rate of 4.2395 per centum without taking into consideration the proper allowance for excise tax, and will deprive The Ohio Fuel Gas Company of its property without due process of law and deny to said Company the equal protection of the law, contrary to the Fourteenth Amendment to the Constitution of the United States.

[fol. 304] (68) The Commission erred in limiting the leasehold valuation of The Ohio Fuel Gas Company to No. 1 acreage and in failing to take into consideration the resulting increased cost of production and transmission, as shown by the uncontradicted evidence. The uncontradicted evidence shows that it would be neither economical nor practical to attempt to operate The Ohio Fuel Gas Company during the term of the Ordinance appealed from with No. 1 leaseholds only. As shown by the uncontradicted testimony of practical natural gas men, such practice would result in increasing the cost of production. More wells would have to be drilled on No. 1 acreage to get the necessary volume of gas, with the result that the rock pressure of all the wells would decrease, thus requiring additional pumping and compressor equipment. Offset wells would have to be drilled to protect the No. 1 acreage from drainage, if the Company did not control Classes 2, 3 and 4. It

would be necessary to reduce the line pressure in order to get the gas out of the ground and then to bring the gas from the low pressure necessary to take it out of the ground to the high pressure necessary for the transmission of it to the markets. The cost of natural gas thus obtained would amount to a prohibitive figure—much greater than the price allowed herein to The Columbus Gas and Fuel Company to be paid to The Ohio Fuel Gas Company for natural gas at the Columbus gateway.

(69) The Commission found that The Ohio Fuel Gas Company has an unlimited supply of gas and gave this as a reason for not allowing amortization of plant, other than Account 211—Gas Well Construction, Account 212—Gas Well Equipment and No. 1 Leaseholds. Notwithstanding this, the Commission refused to allow either a return on the investment or the carrying charges for the reserve acreage which the Commission found contains the unlimited supply of gas which makes such additional amortization unnecessary, upon which the Commission justified its assumption for the purposes of depreciation of an average remaining life for such unamortized property of not less than sixty-six and two-thirds years, and upon which the Commission further justified a rate of return of 6.5 per centum on the present value of the property devoted to an admittedly hazardous undertaking.

(70) The Commission failed to take into consideration the cost and amount of acreage which it was necessary to prospect, take up and test to develop the Company's present No. 1 acreage.

[fol. 305] (71) The Commission found that the No. 1 acreage of The Ohio Fuel Gas Company, on which it has allowed a valuation, is sufficient only for three years and two months, while the ordinance appealed from fixes a rate for five years, and the Commission has not changed such ordinance term.

(72) In arriving at the per cent of General Administrative and Other General Expense applicable to the production and transmission systems, the Commission omitted consideration of the amount paid by The Ohio Fuel Gas Company for lease rentals.

(73) The Commission allowed The Ohio Fuel Gas Company only $391,979.00 for General Administrative Expense —Accounts 427 to 437, when the only competent evidence in this proceeding showed that such annual expenditure was $583,799.00.

(74) The Commission allowed The Ohio Fuel Gas Company only $199,347.00 for Other General Expense—Accounts 442 to 473, when the only competent evidence in this proceeding showed that such annual expenditure was $272,835.00.

(75) In arriving at the rate of return, labor prices and labor performance, the Commission recognized trends and present day conditions, but allowed only 1.35 per centum for excise tax, whereas the law in effect at the time of said finding and order required The Ohio Fuel Gas Company to pay 2.35 per centum on its gross receipts.

(76) The Commission allowed only 12 per centum for Federal income tax, whereas the allowance should have been 13¾ per centum for both The Ohio Fuel Gas Company and United Fuel Gas Company, without any deduction for bond or other interest not allowed or considered by the Commission as operating expense.

(77) The Commission allowed only 6.5 per centum return on the respective rate bases found for each The Ohio Fuel Gas Company and United Fuel Gas Company, whereas such return for each of said companies should not have been less than 8 per centum.

(78) The Commission did not give due regard to the necessity of making reservations from income for surplus [fol. 306] and contingencies of either The Columbus Gas and Fuel Company, The Ohio Fuel Gas Company or United Fuel Gas Company.

(79) While the Commission deducted from the operating expenses of The Columbus Gas and Fuel Company and The Ohio Fuel Gas Company discounts obtained on account of cash payments by said companies, the Commission has not allowed adequate working capital with which to take advantage of such discounts in the future.

(80) While the Commission found and held that it would follow the allowances of expenses and return on investment

made by the Public Service Commission of West Virginia in respect of United Fuel Gas Company, yet this Commission reduced the following allowances of the Public Service Commission of West Virginia:

(a) depreciation allowance on General Property from five per cent. to 1.12 per cent.;

(b) return on the rate base from 8 per cent. (or under the temporary rate 7.23 per cent.) to 6.5 per cent.

(81) The Commission erred in finding, holding and/or ordering

"That the value of all of the property of The Ohio Fuel Gas Company, exclusive of distribution plant, as of December 31st, 1929, is the sum of $74,538,280.00, as fully set forth in Exhibit 'B' appended to the finding of facts filed herein, which Exhibit hereby is made a part of this order by adoption."

(82) The Commission erred in finding, holding and/or ordering

"That the value of all of the property of the United Fuel Gas Company, exclusive of distribution plant, as of December 31st, 1929, is the sum of $37,422,112.00, as set out in Exhibit 'A', which exhibit hereby is made a part of this order by adoption."

(83) The Commission erred in finding, holding and/or ordering

"That for the same fiscal period, the reasonable operating expenses of The Ohio Fuel Company and of the United Fuel Gas Company were as set forth in Exhibits 'B', sheet 1, and 'A', sheet 1, attached to the finding of facts filed herein, which Exhibits are hereby made parts of this order by adoption."

(84) The Commission erred in finding, holding and/or ordering

"That the reasonable and just rate to be paid for natural gas by The Ohio Fuel Gas Company to producing companies at the Ohio River when such gas is to be distributed

in the City of Columbus, Ohio, is the sum of 22¢ per thousand cubic feet."

[fol. 307] (85) The Commission erred in finding, holding and/or ordering

"That the reasonable and just rate to be paid for natural gas by The Columbus Gas and Fuel Company to The Ohio Fuel Gas Company at the point of delivery at the City of Columbus, Ohio, is the sum of 39¢ per thousand cubic feet."

(86) The Commission erred in excluding from its consideration

"that evidence which seeks to establish the fairness of the gate rate by proof that the price was the lowest that could be obtained by the distributing company from the supplying company or from any other available source of supply. Under this rule much testimony presented by the company to the effect that the gate rate at Columbus was the same or lower than that charged at other places, and that there was no other source of supply to the distributing company, must be excluded from our consideration."

(87) The Commission erred in holding that evidence of the value of productive acreage (i. e., Class No. 1)

"could not be based upon the price between a willing buyer and a willing seller. In the very nature of the operation, companies have a monopoly within their own field, and further the value of the land in the market would depend upon the price which the regulated company may be permitted to charge to its customers."

in face of the undisputed evidence showing that the gas lands of The Ohio Fuel Gas Company are contiguous to the gas lands of other and unrelated natural gas producers and are interspersed with gas lands belonging to other and unrelated natural gas producers.

(88) The allocation percentages used by this Commission for the purposes of apportioning or allocating the expenses of United Fuel Gas Company to the business of The Ohio Fuel Gas Company are arbitrary and/or inconsistent with the findings of this Commission.

(89) The Commission erred in finding that Judge Hough had determined

"that the rate to the consumer should be 48 cents, 65% of which, amounting to 31.20 cents was fixed as the gate rate,

and 35%, amounting to 16.80 cents, was the distribution charge.";

whereas the record in the Federal Court case in evidence here shows that Judge Hough did not attempt to fix any gate rate but for the purposes of the 48 cent retail rate which he fixed assumed the validity of the contract between The Columbus Gas and Fuel Company and The Ohio Fuel [fol. 308] Gas Company, which contract provided for a division of 65 per cent. of the retail rate to The Ohio Fuel Gas Company.

(90) The rate of return allowed neither assures nor permits confidence in the financial soundness of applicant or of The Ohio Fuel Gas Company or of United Fuel Gas Company and is inadequate, under efficient and economical management, to maintain and support applicant's credit and/or the credit of said other companies and to enable applicant or said other companies to raise the money necessary for the proper discharge of applicant's public duties.

(91) The Commission erred in finding, holding and/or ordering

"That the reasonable annual charge to be made by The Columbus Gas and Fuel Company for and on account of necessary appropriations to its depreciation reserve account will be one and one-half per cent of the present value of its depreciable property;".

(92) The Commission erred in finding, holding and/or ordering

"That a reasonable annual rate of return to be allowed The Columbus Gas and Fuel Company for the furnishing of natural gas service in the City of Columbus, Ohio, will be 6½% of the aforesaid value of its property, used and useful for the furnishing of natural gas service in the City of Columbus, Ohio;".

(93) There are other errors apparent on the face of the record prejudicial to the rights of the applicant to which its exceptions are noted in the record.

Respectfully submitted, Edward C. Turner, Albert M. Calland, Attorneys for The Columbus Gas and Fuel Company.

Columbus, Ohio, November 1, 1932.

[fol. 309] Copy

Filed Nov. 1, 1932

BEFORE PUBLIC UTILITIES COMMISSION OF OHIO

No. 5935

[Title omitted]

PROTEST OF VALUATIONS

Now comes The Columbus Gas and Fuel Company and files this its protest against the valuations found by this Commission in its finding and order of October 3, 1932.

In filing this protest said The Columbus Gas and Fuel Company does not admit the right, power or authority of the Commission in the above entitled proceeding to fix the valuations of the properties of either The Ohio Fuel Gas Company or United Fuel Gas Company.

In respect of the valuation of the property of The Columbus Gas and Fuel Company protest is made as follows, to-wit:

(1) That the valuation found by the Commission is contrary to the evidence, is not supported by the evidence, is manifestly against the weight of the evidence and is not the true value of all the property of this protesting utility actually used and useful for the convenience of the public, excluding therefrom the value of any franchise or right to own, operate or enjoy the same in excess of the amount (exclusive of any tax or annual charge) actually paid to any political subdivision of the state or county as a consideration for the grant of such franchise or right; and exclusive of any value added thereto by reason of a monopoly or merger. The value so fixed by the Commission will result in a confiscation of protestant's property and will deprive protestant of its property without due process of law and deny to protestant the equal protection of [fol. 310] the law, contrary to the provisions of Section one of Article Fourteen of the Articles in Addition to and Amendment of the Constitution of the United States.

(2) The Commission erred in admitting, receiving and/or relying upon the evidence, or any part thereof, of the wit-

ness Harry R. Allensworth for the reason that said Allensworth did not possess the necessary training, education and/or experience which gave him any peculiar knowledge in respect of the subjects and matters to which he testified.

(3) The Commission erred in overruling the objections to the testimony and exhibits introduced by and through the witness Harry R. Allensworth.

(4) The Commission erred in overruling the objections to the testimony and exhibits introduced by and through the witness Philip Burgess and especially to that testimony and those exhibits of said Burgess which were predicated upon the testimony and exhibits of the witness Harry R. Allensworth.

(5) In account 228—Land: The elimination of the Holder Station Land appraised at $18,700.00 present value, the correctness of which appraisal was not questioned.

(6) In Account 232—Other Distribution System Structures: The elimination of the Holder Station Structures appraised at $3,207.00 reproduction cost new and $2,908.00 reproduction cost new less depreciation, the correctness of which appraisal was not questioned.

(7) In Account 233—Gas Receivers and District Regulators: The elimination of Holder Station and Equipment appraised at $186,828.00 reproduction cost new and $146,163.00 reproduction cost new less depreciation, the correctness of which appraisal was not questioned.

(8) In Account 234—Distribution Line Equipment: The elimination of $266,803.00 reproduction cost new and $216,427.00 reproduction cost new less depreciation, or any part thereof, due to the use by the Commission of erroneous performance and labor rates, contrary to the evidence in this proceeding.

[fol. 311] (9) In Account 235—Service Line Equipment: The elimination of $79,087.00 reproduction cost new and $61,134.00 reproduction cost new less depreciation, or any part thereof, due to the use by the Commission of erroneous performance and labor rates, contrary to the evidence in this proceeding.

(10) In Accounts 258 to 266, inclusive: The elimination of the sum of $181,173.00 reproduction cost new and $148,981.00 reproduction cost new less depreciation, or any part thereof, due to the use by the Commission of an erroneous percentage for Undistributed Construction Expenditures (General Overheads) and the application of that erroneous percentage to an erroneous valuation of the physical property, and based upon the following erroneous assumption by the Commission:

(a) That the construction period for reconstructing the property of The Columbus Gas and Fuel Company was less than the construction period for constructing the property of The Ohio Fuel Gas Company;

(b) That in case of the shorter construction period assumed there would or could be any difference in the items of interest or taxes during construction.

(11) The depreciating below the cost of reproduction new of undistributed Construction Expenditures (General Overheads) for which the Commission made no allowance for annual depreciation reserve.

(12) The elimination of Going Concern value. Such action of the Commission is contrary to the evidence, is not supported by the evidence and will result in the confiscation of protestant's property and will deprive said protestant of its property without due process of law and deny to protestant the equal protection of the law, contrary to said provisions of said Fourteenth Amendment.

(13) The allowance for Working Capital, Materials and Supplies of a sum inadequate to conduct the business of protestant, and contrary to the established practice of this Commission in allowing for working capital, materials and supplies a sum equal to five per centum of the present value of the use and useful physical property.

(14) As shown by the agreed upon evidence introduced here, United States District Judge Hough found, in the Federal Court case, a present value of $3,976,359.00 for the [fol. 312] used and useful property of protestant as of August 31, 1925. Since the date certain of said valuation protestant has increased its used and useful property approximately 30 per cent by net additions costing (at book

cost only) $1,203,233.00, exclusive of all overheads, or a total value of property without overheads and without depreciation since said date certain of $5,179,592.00, or a total of $1,151,945.00 more than the valuation made by the Commission herein.

(15) As shown by the agreed upon evidence here, it was adjudicated in a proceeding duly pending in the United States District Court for the Southern District of Ohio, Eastern Division—The Columbus Gas and Fuel Company vs. The City of Columbus, In Equity No. 362, that the used and useful property of The Columbus Gas and Fuel Company dedicated to serving natural gas within the City of Columbus did possess a going concern value of the value on August 31, 1925 of $409,842.00.

(16) The Commission erred in adopting theoretical labor performances in total disregard of the evidence of the Company showing actual performance on every similar job of work in or around the city of Columbus over a period of time sufficient to justify the accuracy of the data, with moving and still pictures showing the actual make-up of labor gangs, equipment, trucks and working conditions.

Without admitting the right, power or authority of this Commission to fix a valuation of the property of The Ohio Fuel Gas Company in the above entitled proceeding, The Columbus Gas and Fuel Company protests the valuation of the property of The Ohio Fuel Gas Company found by this Commission in its said order and finding of October 3, 1932, in the following respects, to-wit:

(17) This Commission has no right, power or authority to fix the value of the property of The Ohio Fuel Gas Company in this proceeding. Said the Ohio Fuel Gas Company is not a public utility in respect of the natural gas sold and/or delivered by it to The Columbus Gas and Fuel Company.

(18) That the valuation found by the Commission is contrary to the evidence, is not supported by the evidence, [fol. 313] is manifestly against the weight of the evidence and is not the true value of all the property of The Ohio Fuel Gas Company actually used and useful for the convenience of the public, excluding therefrom the value of any franchise or right to own, operate or enjoy the same in excess of the amount (exclusive of any tax or annual

charge) actually paid to any political subdivision of the state or county as a consideration for the grant of such franchise or right; and exclusive of any value added thereto by reason of a monopoly or merger. The value so fixed by the Commission will result in a confiscation of said The Ohio Fuel Gas Company's property and will deprive said Company of its property without due process of law and deny to said Company the equal protection of the law, contrary to the provisions of Section one of Article Fourteen of the Articles in Addition to and Amendment of the Constitution of the United States.

(19) The Commission erred in admitting, receiving and/or relying upon the evidence, or any part thereof, of the witnesses Harry R. Allensworth and J. Paul Blundon for the reason that said Allensworth and Blundon did not possess the necessary training, education and/or experience which gave them any peculiar knowledge in respect of the subjects and matters to which they testified.

(20) The Commission erred in overruling the objections to the testimony and exhibits introduced by and through the witness Harry R. Allensworth.

(21) The Commission erred in overruling the objections to the testimony and exhibits introduced by and through the witness J. Paul Blundon and especially to that testimony and those exhibits of said Blundon which were predicated upon the testimony and exhibits of the witness Harry R. Allensworth.

(22) The elimination of the cost of Organization in the amount of $1,999,922.00 and the failure to make any provision for the cost of organization.

(23) The elimination of Incomplete Construction of the value of $234,295.00, or any part thereof.

[fol. 314] (24) In Accounts 258 to 266, inclusive—Undistributed Construction Expenditures: The elimination of $481,224.00 of reproduction cost new value and $2,539,939.00 reproduction cost new less depreciation, contrary to the evidence in the above entitled proceeding and contrary to the practice of this Commission in other cases.

(25) The failure of the Commission to allow the Cost of Financing which would necessarily be incurred in the re-

production of the property of The Ohio Fuel Gas Company, and which the Commission is authorized to recognize and allow by sub-section g of Section 499-9 of the General Code of Ohio.

(26) The placing of an inadequate valuation on the No. 1 acreage, contrary to the evidence in the above entitled proceeding.

(27) The elimination of all value for No. 2 leaseholds which the testimony in the above entitled proceeding shows to be now used and useful and necessary for supplying natural gas during the term of the ordinance herein appealed from.

(28) The elimination of all value for No. 3 and No. 4 classes of leaseholds, which the uncontroverted evidence in this proceeding shows to be necessary to the conduct of the business of The Ohio Fuel Gas Company in supplying natural gas to The Columbus Gas and Fuel Company during the term of the ordinance herein appealed from.

(29) The Commission erred in refusing to admit competent and relevant testimony tending to show that there is a market for leaseholds and tending to show the value of such leaseholds in the market.

(30) The Commission erred in holding that The Ohio Fuel Gas Company had a monopoly within its own field in the matter of leaseholds. Company Exhibits Nos. 142, 143 and 144 and Company Exhibit No. 139 show that the various leaseholds, including all of The Ohio Fuel Gas Company's operated acreage, are located contiguous to leaseholds owned and operated by others. Leases of gas bearing lands owned and operated by others are interspersed throughout the entire territory of The Ohio Fuel Gas Company's leaseholds.

[fol. 315] (31) The Commission erred in its finding

"that inasmuch as the Supreme Court has held that the nonproductive acreage may not be considered in fixing the rate base, it must logically follow that the expense of carrying that nonproductive acreage may not be considered as a part of the maintenance of the system which has at its command other acreage which is actually producing gas and is therefore used and useful."

In view of other findings made by the Commission in respect of said leaseholds, its deduction instead of being logical is a non sequitur and for the following reasons, to-wit:

At page 8 of its findings this Commission found:

"The company did present a mass of testimony touching every detail of the great system which has been built up for the purpose of acquiring and developing gas land throughout the States of Ohio, West Virginia and to some extent in Kentucky, and of the transportation of gas from the fields to the points of ultimate distribution. In addition to the lands now used as a present source of supply, it also developed the fact that the company holds in reserve under lease hundreds of thousands of acres of lands not yet developed but which are a potential reservoir which must be controlled in order that a continuous supply of gas may be assured such as will justify the investment of large sums of money in transportation and distribution systems."

At page 14 of its findings this Commission found:

"Large gas companies, and especially the one now under consideration, have pursued the policy of acquiring, under lease, not only gas lands which have been tested and are known to be gas producing, but also other lands adjacent thereto, which from a geological study and their proximity to tested lands give promise of supplying a reservoir from which gas may be drawn through a long period of years."

At page 18 of said findings it was found by the Commission:

"It is urged by the company that a wise business policy dictates that future requirements must be provided for to justify the expenditure of large sums of money in transportation and distribution facilities. It is insisted that the control of large reservoirs of gas for future use is the very foundation of the stability of the company and that without such reserve the company could not in justice to itself spend the sums necessary for transmission lines and for distribution within municipalities. It is insisted that it would be the height of folly to venture large sums which would be lost to the company if it were deprived of the back-log of gas reserves, and it is pointed out that unless the company secure to itself these gas lands for future development, a

rival company might come into the field and lease the lands placing the present company at the mercy of its rival, when it has exhausted the gas beneath what is now designated as productive acreage.

[fol. 316] "It is insisted that while the Supreme Court in the Logan Gas case above referred to decided that unproductive lands could not be considered in fixing the base valuation, yet the question was not squarely placed before it as to whether or not the expense of carrying this acreage was a proper maintenance charge to be paid out of the income of the company, to be charged against the present rate payer.

"It must be admitted that there is much force in the contention of the company. On the other hand it is urged that the present rate payer should not be penalized by a higher rate to take care of the future rate payer. It is urged that, if the company as a matter of policy, decides to secure to itself gas reserves which are not at present used and useful that that is no concern of the present rate payer who is obliged to pay only a proper return upon the property used and useful."

The evidence showed and the Commission found that the average remaining life of the No. 1 leaseholds was three years and two months. Notwithstanding the Commission allowed only the value of leaseholds which would be exhausted within three years and two months from the effective date of the ordinance, the Commission made the assumption that The Ohio Fuel Gas Company had an inexhaustible supply of gas and the Commission predicated its annual allowance for depreciation reserve on the property of The Ohio Fuel Gas Company upon the assumption of such inexhaustible supply of gas, and refused to allow anything for obsolescence or amortization on the admitted used and useful property of The Ohio Fuel Gas Company except for No. 1 leaseholds, Account 211—Gas Well Construction and Account 212—Gas Well Equipment. It is respectfully protested that the annual allowances for depreciation, obsolescence and/or amortization should be based upon the life of the leaseholds considered in the valuation. In other words, the protest here is to the assuming by the Commission of a remaining life of sixty-six and two-thirds years for calculating depreciation on all of the depreciable property of The Ohio Fuel Gas Company except Account

211—Gas Well Construction, Account 212—Gas Well Equipment and No. 1 Leaseholds, and not allowing in the rate base leaseholds or gas lands actually owned and held by the company necessary for a supply of natural gas beyond a period of three years and two months from the effective date of the ordinance appealed from.

The Commission has found that it is the policy of the company to carry the reserve acreage. No criticism is made [fol. 317] by the Commission of the amount of reserve acreage actually held by the Company. The undisputed evidence in the case by every witness competent to speak thereon is that all of the gas lands, including Classes Nos. 1, 2, 3 and 4, which except for the purposes only of appraisal are known in the industry as, respectively, operated and unoperated, are used and useful in the business of The Ohio Fuel Gas Company in supplying gas to The Columbus Gas and Fuel Company. If The Ohio Fuel Gas Company must pay delay rentals out of the six and one-half per cent. return on the rate base herein fixed, then the net return to The Ohio Fuel Gas Company on such rate base will be reduced to less than 4.24 per cent., with the effect that the gate rate herein fixed will result in confiscating and depriving The Ohio Fuel Gas Company of its property without due process of law and denying to said Company the equal protection of the law, contrary to said provisions of said Fourteenth Amendment.

(32) The elimination from said valuation of all Going Concern value. Such action of the Commission is contrary to the evidence, is not supported by the evidence and will deprive The Ohio Fuel Gas Company of its property without due process of law and deny to said Company the equal protection of the law, contrary to said provisions of said Fourteenth Amendment.

(33) The allowance of an inadequate amount for Working Capital, Materials and Supplies, insufficient for said The Ohio Fuel Gas Company to transact its business in the ordinary way, and contrary to the established practice of this Commission of allowing a sum equal to five per centum of the present value of a utility's physical property for working capital, materials and supplies.

(34) The method of ascertaining the present value of the property described in Account 211—Gas Well Construction.

(35) The method of ascertaining the present value of the property described in Account 212—Gas Well Equipment.

(36) The depreciating below the cost of reproduction new of the Undistributed Construction Expenditures (General Overheads), for which the Commission made no allowance for annual depreciation reserve.

[fol. 318] Without admitting the right, power or authority of this Commission to fix a valuation of the property of United Fuel Gas Company in the above entitled proceeding. The Columbus Gas and Fuel Company protests the valuation of the property of United Fuel Gas Company found by this Commission in its said order and finding of October 3, 1932, in the following respects, to-wit:

(37) This Commission has no right, power or authority to fix the value of any property of a public utility or other corporation situated outside of the state of Ohio and which, so far as the proceedings herein are concerned, does no business within the state of Ohio, even though the common stock of said utility or other corporation be owned by the same corporation which owns the common stock of protestant.

(38) That the valuation found by the Commission is contrary to the evidence, is not supported by the evidence, is manifestly against the weight of the evidence and is not the true value of all the property of said United Fuel Gas Company actually used and useful for the convenience of the public, excluding therefrom the value of any franchise or right to own, operate or enjoy the same in excess of the amount (exclusive of any tax or annual charge) actually paid to any political subdivision of the state or county as a consideration for the grant of such franchise or right; and exclusive of any value added thereto by reason of a monopoly or merger. The value so fixed by the Commission will result in a confiscation of said United Fuel Gas Company's property and will deprive said Company of its property without due process of law and deny to said Company the equal protection of the law, contrary to the provisions of Section one of Article Fourteen of the Articles in Addition to and Amendment of the Constitution of the United States.

(39) This Commission has no right, power or authority to eliminate all going concern value. The elimination of going concern value is contrary to the evidence, is not supported by the evidence and will deprive said United Fuel Gas Company of its property without due process of law and deny to said Company the equal protection of the law, contrary to said provisions of said Fourteenth Amendment.

[fol. 319] (40) The allowance for Construction Overheads is insufficient and is contrary to the evidence.

(41) The valuation of the leaseholds is contrary to the evidence and contrary to law.

(42) The valuation of the Gas Well Equipment is contrary to the evidence and contrary to law.

(43) The allocation percentages used by this Commission for the purposes of apportioning or allocating the value of the property of United Fuel Gas Company to the business of The Ohio Fuel Gas Company are arbitrary and/or inconsistent with the findings of this Commission.

(44) The Commission erred in its computation of the amount of working capital of United Fuel Gas Company allocable to the business of that company other than West Virginia regulated business.

Respectfully submitted, Edward C. Turner, Albert M. Calland, Attorneys for The Columbus Gas and Fuel Company.

Columbus, Ohio, November 1, 1932.

[fol. 319a] BEFORE PUBLIC UTILITIES COMMISSION OF OHIO

No. 5935

[Title omitted]

APPLICATION FOR REHEARING

Now comes the City of Columbus, defendant, and files this its application for rehearing in the above entitled cause in respect to the matters and things found, determined and/or adjudicated by the Public Utilities Com-

mission of Ohio by its majority findings, filed and entered herein on October 3, 1932, and also for the suspension, modification and vacation of the order made and entered herein on said October 3, 1932, because the said findings and order, and each of them, are contrary to law, are not supported by the evidence, are contrary to the evidence and are manifestly against the weight of the evidence, and are unreasonable, unlawful and manifestly in error, in the following respects and for the following reasons, to-wit:

I. The Commission erred in determining and fixing the rates and charges for furnishing natural gas service in the City of Columbus and in substituting the same for the rates and charges fixed by the said Ordinance, before its tentative valuations of the utility properties had been made and/or had become final and before the exceptions of the City of Columbus to the said tentative valuations had been heard and finally adjudicated and before there had been substantial compliance with Section 499-12 of the General Code of Ohio.

[fol. 319b] II. The Commission erred in finding, holding and/or ordering

"The value of the several kinds and classes of property of The Columbus Gas and Fuel Company, used and useful for the convenience of the public in the furnishing of natural gas service for public and private consumption in the City of Columbus and of said properties as a whole, as of December 31st, 1929, to be the sum of $4,029,647.00, as more fully set forth in Exhibit "C" appended to the finding of facts filed herein, which exhibit hereby is made a part of this entry by adoption, as fully as if the same were here set forth in its entirety."

III. The Commission erred in finding, holding and/or ordering

"That the value of all of the property of The Ohio Fuel Gas Company, exclusive of distribution plant, as of December 31st, 1929, is the sum of $74,538,280.00, as fully set forth in Exhibit "B" appended to the finding of facts filed herein, which Exhibit hereby is made a part of this order by adoption;"

IV. The Commission erred in finding, holding and/or ordering

"That the value of all of the property of The United Fuel Gas Company, exclusive of distribution plant, as of December 31st, 1929, is the sum of $37,422,112.00, as set out in Exhibit "A", which exhibit hereby is made a part of this order by adoption;"

V. The Commission erred in finding, holding and/or ordering

"That the reasonable costs and expenses of The Columbus Gas and Fuel Company for the furnishing of its natural gas service to consumers within the City of Columbus, Ohio, based upon a consumption of 5,671,639,000 cubic feet of natural gas for the calendar year ended December 31st, 1929, were as set forth in Exhibit "C", Sheet 1, appended to the finding of facts filed herein, which Exhibit hereby is made a part of this order by adoption;"

VI. The Commission erred in finding, holding and/or ordering

"That for the same fiscal period the reasonable operating expenses of The Ohio Fuel Gas Company and of The United Fuel Gas Company were as set forth in Exhibit "B", Sheet 1, and "A", sheet 1, attached to the finding of facts filed herein, which Exhibits are hereby made parts of this order by adoption;"

[fol. 319c] VII. The Commission erred in finding

"That the rate per thousand cubic feet of 48¢, with an additional charge of 5¢ per thousand cubic feet, if the monthly bills are not paid within a fixed time, with a minimum charge of 75¢ per month without discount, fixed and prescribed by said Ordinance, are unreasonable and unjust and ought not to be ratified and confirmed, and that just and reasonable rates and charges should be substituted therefor;"

VIII. The Commission erred in finding

"That the rate per thousand cubic feet of 55¢, with an additional charge of 5¢ per thousand cubic feet, if monthly bills are not paid within a fixed time, and a monthly minimum charge of 75¢, without discount, are just and rea-

sonable rates and charges for the service furnished and supplied by said appellant in the City of Columbus, Ohio;"

IX. The Commission erred in receiving, considering, accepting, hearing and/or applying, in its valuation of the property of The Columbus Gas and Fuel Company and also of The Ohio Fuel Gas Company and also of The United Fuel Gas Company, and in its determination of the respective operating charges of said Companies, and in its findings and decisions on the matters at issue, the erroneous and unsupported data, opinions and conclusions of one or more of its subordinate engineers, which opinions and conclusions were both contrary to law and unsupported by the evidence, without affording to the City of Columbus any opportunity to cross-examine the said engineers, to which the law and a fair hearing entitled the said City of Columbus, all of which would have been fully revealed by cross examination.

X. The Commission erred in fixing the cost of distribution of natural gas within the City of Columbus at 16.03¢, instead of 14.96¢ per M.C.F.

XI. The Commission erred in fixing the price of natural gas which The Ohio Fuel Gas Company may charge The Columbus Gas and Fuel Company at 39.02¢, instead of at not more than 26.27¢ per M.C.F.

XII. The Commission erred in fixing the price of natural [fol. 319d] gas which The United Fuel Gas Company may charge The Ohio Fuel Gas Company at 22¢, instead of at not more than 18¢ per M.C.F.

XIII. The Commission erred in fixing the rate for natural gas, which may be charged at the consumer's meter in the City of Columbus, at 55¢ instead of fixing it at not more than 40.85¢, and especially at not more than the ordinance rate of 48¢ per M.C.F.

XIV. The Commission erred in finding, holding and ordering that the rates and charges fixed in said order are just and reasonable for the furnishing of natural gas service by The Columbus Gas and Fuel Company for public and private consumption in the City of Columbus, Ohio, whereas the same are altogether unjust and unreasonable.

XV. The Commission erred in finding, holding and/or ordering that the rates and charges fixed by the Ordinance of the City of Columbus are unjust and/or unreasonable.

XVI. The Commission erred in substituting for the rates and charges fixed by said Ordinance the rates and charges fixed, found and determined by the Commission.

XVII. The Commission erred in fixing the percentages of depreciation of mains and services of The Columbus Gas and Fuel Company at 16.96 per cent and 22.7 per cent respectively, whereas it should have fixed them at not less than 28 per cent and 35 per cent respectively.

XVIII. The Commission erred in fixing the per cent of depreciation of transmission lines of The Ohio Fuel Gas Company at 17.5 per cent, whereas it should have fixed it at not less than 50 per cent.

XIX. The Commission erred in fixing the respective rates of return for The Columbus Gas and Fuel Company, The Ohio Fuel Gas Company and The United Fuel Gas Company at 6½ per cent instead of not more than 6 per cent.

XX. The Commission erred in the amount allowed The Ohio Fuel Gas Company for working capital, material and [fol. 319e] supplies in that it fixed the sum at $2,690,132.00, whereas the amount allowed should not have exceeded the sum of $1,500,000.00.

XXI. The Commission erred in the adoption of unit prices for pipe in the property of The Ohio Fuel Gas Company, which caused an illegal increase of $1,546,518.00 in the valuation of said Company.

XXII. The Commission erred in fixing the value of leaseholds of The Ohio Fuel Gas Company in that it allowed $25.00 per acre and a total sum of $7,284,900.00, whereas it should have allowed not in excess of $6.00 per acre and a total of $1,569,480.00.

XXIII. The Commission erred in allocating the properties of The United Fuel Gas Company to determine a proper rate to The Ohio Fuel Gas Company by assigning 36.22 per cent of the value of said United Fuel Gas Company's properties employed in the unregulated business.

XXIV. The Commission erred in fixing the value of leaseholds of The United Fuel Gas Company at the allocated sum of $2,462,023.00, and by including therein a value for all unoperated acreage since said unoperated acreage should have been totally excluded and the allocated values for operated acreage alone should not have exceeded $1,193,277.00.

XXV. The Commission erred in including in the cost of production of The United Fuel Gas Company the sum of $845,956.00 delay rentals on unoperated acreage, whereas the same should have been totally excluded and no allowance made therefor.

XXVI. The Commission erred in fixing the amount allowable annually to The Ohio Fuel Gas Company for amortization and depreciation in that it allowed the amount of $4,826,566.00, whereas, in consideration of the evidence and especially of the small percentage of depreciation of properties found by the Commission, it should have allowed not more than $1,765,607.00.

XXVII. The Commission erred in fixing $680,071.00 as [fol. 319f] the allocated amount allowable annually to The United Fuel Gas Company for amortization and depreciation, whereas it should have allowed for such purposes not more than the allocated sum of $328,370.00.

XXVIII. The Commission erred in fixing and adopting a system-wide gate-rate for The Ohio Fuel Gas Company applicable to Columbus and to The Columbus Gas and Fuel Company, thereby unjustly and illegally burdening Columbus consumers with the cost of delivering gas to remote places supplied by said The Ohio Fuel Gas Company and increasing the price of gas to Columbus consumers.

XXIX. The Commission erred in failing and refusing to adopt and use a demand-mileage allocation, and if it rejected that method of allocation, then in failing and refusing to adopt a sales-mileage allocation, of the transmission lines of The Ohio Fuel Gas Company used and useful in supplying natural gas in the City of Columbus and of the costs of transmission.

XXX. The Commission erred in failing and refusing to give effect to the profits arising from the gasoline extrac-

tion and business of The Preston Oil Company, which is operated jointly with, and partially at the expense of, The Ohio Fuel Gas Company.

XXXI. The Commission erred in failing and refusing to give effect to the valuable benefits received by The Preston Oil Company from drilling operations performed by The Ohio Fuel Gas Company, and also in failing and refusing to recognize and give effect to the inequitable arrangement whereby all discovered oil wells are turned over to the Preston Oil Company for totally inadequate compensation.

XXXII. The Commission erred in failing to deduct from operating expenses of The United Fuel Gas Company one-[fol. 319g] half of the net revenue derived from gasoline extraction in the allocated amount of $205,925.00.

XXXIII. The Commission erred in failing to deduct from the operating expenses of The United Fuel Gas Company revenue derived from transportation of gas for The Pittsburgh and West Virginia Gas Company in the allocated amount of $205,722.00.

XXXIV. The order of the Commission and each of the findings hereinbefore complained of are not sustained by the evidence and are in clear and direct conflict therewith and contrary to law.

XXXV. The Commission erred in ordering and decreeing

"That the rates and charges not greater than or in excess of the rates and charges for the furnishing of natural gas to the City and private consumers, and to the public buildings, grounds, streets, alleys and market places in the City of Columbus, Ohio, for public and private consumption, which the Commission herein has found to be just and reasonable, be, and remain in force and effect for a period of five years from and after the effective date of the Ordinance herein complained of and appealed from, and said The Columbus Gas and Fuel Company hereby is notified, directed and required to furnish its product to its consumers thereof, public and private, in the City of Columbus, Ohio, for said period."

XXXVI. The Commission erred in ordering and decreeing that the rate- and charges found and fixed by them

should be the effective rates and charges for the whole of the said five-year ordinance period ending November 12, 1934, instead of for the remainder of the said ordinance period beginning at the effective date of the Commission's order.

XXXVII. There are other errors apparent on the face of the record prejudicial to the rights of the defendant to which it has duly excepted.

Wherefore, the said defendant, the City of Columbus, prays the Commission to grant a rehearing herein, and especially of each and all of the matters and things now complained of and to suspend, modify, and vacate and set [fols. 319h & h-1] aside its said order of October 3, 1932, and, if said order be not vacated and set aside, to fix such an effective date for the operation of its said order as will enable the merits of the case to be passed on by the Supreme Court of Ohio and the case to be there finally adjudicated by that Court before the order of this Commission shall become effective and operative, to the end that a finding and order may be entered herein in accordance with the facts and the law and with equity to all the parties hereto, and for all other and further orders and relief to which said defendant may be entitled in the premises.

City of Columbus, by Henry W. Worley, Mayor; John L. Davies, City Attorney; James M. Butler, James W. Huffman, of Counsel.

Dated at Columbus, Ohio, October 19, 1932.

[fol. 319i] BEFORE PUBLIC UTILITIES COMMISSION OF OHIO

No. 5935

[Title omitted]

OBJECTION, PROTEST AND NOTICE OF PROTEST OF VALUATION

Without waiving, or intending to waive, any rights, claims or privileges of any kind accruing to the City of Columbus by reason of the unreasonable, illegal and unlawful findings and order of the Public Utilities Commission of

Ohio, filed and entered on October 3, 1932, and especially by reason of its attempt to fix therein and thereby a rate to be charged and collected for natural gas by The Columbus Gas and Fuel Company within said City, based upon purported final valuations of the properties in this cause, without having first fixed, filed and/or announced tentative valuations of said properties in compliance with Section 499-12 and other sections of the General Code of Ohio applicable thereto, which tentative valuations the said City would have had the right to protest, and not waiving, but expressly saving, its demand that said rate be vacated, set aside and held for naught, and still objecting and excepting to the action of the said Commission in failing to grant said demand, and still objecting to the illegal and unlawful procedure followed by the Commission, the said City hereby respectfully protests against the reproduction and present valuations of the properties under consideration herein, and the values assigned to the several kinds and classes of property used and useful for the convenience of the pub- [fol. 319j] lic in the furnishing of natural gas service, as such valuations were found and ascertained in the said findings and order of October 3, 1932, and especially as hereinafter specifically set forth, for the following reasons and upon the following grounds, to-wit:

I. Said City protests and objects, and especially as hereinafter more particularly stated, to the values assigned to the several kinds and classes of property of The Columbus Gas and Fuel Company used and useful for the convenience of the public in the furnishing of natural gas service for public and private consumption in the City of Columbus, and likewise to the values of said properties as a whole, as of December 31, 1929, as set forth in Exhibit "C" appended to the finding of facts and made a part of the said order of the Commission by adoption.

Said City protests against the percentages of depreciation of the mains and services of The Columbus Gas and Fuel Company as fixed and to the resulting evaluations thereof. Said percentages of depreciation were set at 16.96 per cent and 22.7 per cent respectively, whereas they should have been not less than 28 per cent and 35 per cent respectively.

Said City protests against the percentage of depreciation of the meters of The Columbus Gas and Fuel Com-

pany as fixed and to the resulting evaluation thereof. Said percentage of depreciation was fixed at 4.37 per cent, whereas it should have been not less than 15 per cent.

Said City protests against the labor costs fixed by the Commission for The Columbus Gas and Fuel Company in said Exhibit "C", for the reason that, although the labor costs set up by the City were accepted by the majority of the Commission, (see page 42 of their opinion), still, in fact, a 10 per cent reduction was taken of the costs applied by the Company, which produced labor costs in excess of [fol. 319k] those that should have been included.

Said City protests against the labor performance used by the majority of the Commission in the valuation of The Columbus Gas and Fuel Company as set forth in Exhibit "C" attached to the opinion, since it is figured upon the performance used by the Company, whereas, the Commission (see page 42 of opinion) found that the labor performance set up by the City should be used.

Said City protests against the valuation of the properties of The Columbus Gas and Fuel Company as a whole, as of December 31, 1929, to-wit, the sum of $4,027,645.00.

II. The said City believes that said Section 499-12 and kindred sections of the General Code of Ohio, with the right to protest tentative valuations thereunder, apply only to the properties of The Columbus Gas and Fuel Company and not to the properties of The Ohio Fuel Gas Company. But it is impossible for the said City, within the time allowed by law for filing protests to said tentative valuations, to establish, by final adjudication, the law applicable thereto, and, if the said City elected to stand upon its said belief, it might lose valuable rights and might be held to have assented to the said valuations of the property of the said The Ohio Fuel Gas Company. Therefore, in the event that the said City be mistaken, and the said City have the right to protest said valuations, and the said Commission have the right to receive, consider and pass upon such protests, the said City here and now records its protests and objections to said valuations, as follows:

Said City protests and objects, and especially as hereinafter more particularly stated, to the values assigned to the several kinds and classes of property of The Ohio Fuel Gas Company, exclusive of distribution plant, used

and useful, and likewise to the value of said properties as a whole, as of December 31, 1929, as set forth in Exhibit [fol. 319l] "B" appended to the findings of facts and made a part of the said order of the Commission by adoption.

Said City protests against the per cent of depreciation of transmission lines of The Ohio Fuel Gas Company assigned by the Commission and the resulting evaluation thereof. Said percentage of depreciation assigned is 17.5 per cent, whereas it should have been fixed at not less than 50 per cent.

Said City protests against the amount allowed The Ohio Fuel Gas Company for working capital, material and supplies in that the Commission fixed the sum of $2,690,132.00, whereas the amount allowed should not have exceeded the sum of $1,500,000.00.

Said City protests against the valuation of the properties of The Ohio Fuel Gas Company in that the Commission adopted incorrect unit prices, which caused an illegal increase of $1,546,518.00 in the valuation of said Company.

Said City protests against the valuation assigned by the Commission for the leaseholds of The Ohio Fuel Gas Company in that the Commission allowed $25.00 per acre and a total sum of $7,284,900.00, whereas the Commission should have allowed not more than $6.00 per acre and a total of not more than $1,569,480.00.

Said City protests against the valuation of the properties of The Ohio Fuel Gas Company as a whole, as of December 31, 1929, to-wit, the sum of $74,538,280.00.

Said City protests against the action of the Commission in fixing and adopting a system-wide gate rate for The Ohio Fuel Gas Company applicable to Columbus and to The Columbus Gas and Fuel Company, thereby unjustly and illegally burdening Columbus consumers with the cost of delivering gas to remote places supplied by said The Ohio Fuel Gas Company and increasing the price of gas to Columbus consumers.

Said City protests against the action of the Commission [fol. 319m] in failing and refusing to adopt and use a demand-mileage allocation, and, if it rejected that method of allocation, then in failing and refusing to adopt at least a sales-mileage allocation of the transmission lines of The Ohio Fuel Gas Company used and useful in supplying natural gas in the City of Columbus.

III. The said City believes that said Section 499-12 and kindred sections of the General Code of Ohio, with the right to protest tentative valuations thereunder, apply only to the properties of The Columbus Gas and Fuel Company and not to the properties of The United Fuel Gas Company. But it is impossible for the said City, within the time allowed by law for filing protests to said tentative valuations, to establish, by final adjudication, the law applicable thereto, and, if the said City elected to stand upon its said belief, it might lose valuable rights and might be held to have assented to the said valuations of the property of the said The United Fuel Gas Company. Therefore, in the event that the said City be mistaken and the said City have the right to protest said valuations, and the said Commission have the right to receive, consider and pass upon such protests, the said City here and now records its protests and objections to said valuations, as follows:

Said City protests and objects, and especially as hereinafter more particularly stated, to the values assigned to the several kinds and classes of property of The United Fuel Gas Company, exclusive of distribution plant, used and useful, and likewise to the value of said properties as a whole, as of December 31, 1929, as set forth in Exhibit "A" appended to the findings of facts and made a part of the said order of the Commission by adoption.

Said City protests against the valuation of leaseholds of The United Fuel Gas Company as fixed by the Commis- [fol. 319n] sion at an allocated sum of $2,462,023.00, including therein a value for all unoperated acreage, since said unoperated acreage should have been totally excluded and the allocated valuation for operated acreage alone should not have exceeded $1,193,277.00.

Said City protests against an allocation of the properties of The United Fuel Gas Company to determine a proper rate to The Ohio Fuel Gas Company by assigning 36.22 per cent of the value of said The United Fuel Gas Company's properties employed in the unregulated business.

Said City protests against the valuation of the properties of The United Fuel Gas Company as a whole, as of December 31, 1929, to-wit, the sum of $37,422,112.00.

Wherefore, the City of Columbus, still objecting and excepting and expressly saving unto itself all its rights, as

hereinbefore set forth, does hereby protest said valuations and each of them and any order of the said Commission approving the same, and prays the Commission, after due hearing, to correct said valuations in the manner and form and to the extent hereinbefore suggested and requested.

The said City further asks the Commission for such other and further orders and relief as may be proper in the premises.

The City of Columbus, by Henry W. Worley, Mayor; John L. Davies, City Attorney; James M. Butler, James W. Huffman, of Counsel.

[fols. 319o & p] *Duly sworn to by John L. Davies. Jurat omitted in printing.*

[fol. 320] BEFORE PUBLIC UTILITIES COMMISSION OF OHIO

No. 5935

In the Matter of the Complaint and Appeal of THE COLUMBUS GAS AND FUEL COMPANY from an Ordinance of the City of Columbus, Ohio, to Regulate the Price That May Be Charged for Natural Gas in the City of Columbus.

ORDER FOR HEARING ON PROTESTS

The City of Columbus having, on October 31st, 1932, and The Columbus Gas and Fuel Company, having, this first day of November, 1932, filed their respective protests to the tentative valuation, certified in the finding and order made and entered herein October 3rd, 1932, it is,

Ordered, That hearing upon such protests be, and hereby is, assigned for Wednesday, November 9th, 1932, at one-thirty p. m., Eastern Standard Time, at the hearing room of this Commission in the State Office Building, Columbus, Ohio. And there now being submitted to, and undecided by, this Commission a motion on behalf of the said City of Columbus to vacate such finding and order of October 3rd, 1932, and applications for rehearing of this proceeding on behalf of both, the said City of Columbus and said The Columbus Gas and Fuel Company, it is, further,

Ordered, That the effective date of the finding and order made and entered herein October 3rd, 1932, be, and hereby

the same is, at this time, extended to November 10th, 1932, with the reservation to this Commission of the right, upon said date or any date prior thereto, to further extend the effective date of said finding and order.

The Public Utilities Commission of Ohio, E. J. Hopple, Chairman; Frank W. Geiger, John W. Bricker, Commissioners. (Seal.)

Dated at Columbus, Ohio, this 1st day of November, 1932.

A true copy:
Ira E. Sprankle, Superintendent of Investigation.

[fol. 321] Copy

BEFORE PUBLIC UTILITIES COMMISSION OF OHIO

No. 5935

[Title omitted]

ORDER FOR HEARING ON PETITIONS FOR REHEARING

It appearing that protests, by the parties hereto, to the tentative valuation certified herein are now assigned for public hearing on November 9th, 1932.

And it further appearing that there are also pending, before this Commission, applications by the said parties for a rehearing with respect to the matters and things decided and determined by the finding and order made and entered herein, upon October 3rd, 1932, it is,

Ordered, That the said applications of the City of Columbus and of The Columbus Gas and Fuel Company for a rehearing of this proceeding, be, and hereby they, and each of them, also are assigned for hearing Wednesday, November 9th, 1932, at one-thirty o'clock P. M., Eastern Standard Time, at the hearing room of this Commission in the State Office Building, Columbus, Ohio.

The Public Utilities Commission of Ohio, E. J. Hopple, Chairman; Frank W. Geiger, Commissioners. (Seal.)

Dated at Columbus, Ohio, this 4th day of November, 1932.

A true copy:
Ira E. Sprankle, Superintendent of Investigation.

[fol. 322]

Copy

BEFORE PUBLIC UTILITIES COMMISSION OF OHIO

No. 5935

In the Matter of the Complaint and Appeal of THE COLUMBUS GAS AND FUEL COMPANY from an Ordinance of the City of Columbus, Ohio, to Regulate the Price That May Be Charged for Natural Gas in the City of Columbus.

ORDER DENYING PETITIONS FOR REHEARING, ETC.—Filed Nov. 28, 1932

This day after full hearing, due notice of the time and place of which was given to all parties in interest and argument by counsel, this matter came on for further consideration upon the following pleadings now pending in said proceeding, to-wit:

The motion of the City of Columbus to vacate the finding and order made and entered herein October 3rd, 1932;

The separate protests of the City of Columbus, Ohio and The Columbus Gas and Fuel Company, of the tentative valuation of the several kinds and classes of property of The Columbus Gas and Fuel Company, certified herein in the finding and order of October 3rd, 1932, and

The separate applications for rehearing of the said City of Columbus, Ohio, and The Columbus Gas and Fuel Company.

And the Commission coming first to consider the motion of the City of Columbus, Ohio, to vacate the finding and order made and entered herein October 3rd, 1932, finds:

That said motion is not well taken and should be, and hereby the same is, overruled.

To which action of the Commission in overruling its said motion, the said City of Columbus, Ohio, then excepted, here now excepts, and its exceptions here are noted of record.

And the Commission coming now to consider the separate protests of the said City of Columbus and said The Columbus Gas and Fuel Company to the valuation of the several

kinds and classes of property of The Columbus Gas and Fuel Company certified herein, October 3rd, 1932, finds:

That the valuation heretofore made and certified is not incomplete and inaccurate, and

That said protests and each and every ground thereon are not well taken,

and does hereby overrule such protests and each of them.

To which order of the Commission overruling their said protests, the said City of Columbus, Ohio, and said The [fol. 323] Columbus Gas and Fuel Company, each then excepted, here now except and their exceptions here are noted of record.

And the Commission coming now to consider the separate applications of the said City of Columbus, Ohio, and said The Columbus Gas and Fuel Company, asking for the reasons and upon the grounds set forth therein, a rehearing with respect to the matters and things decided and determined by the finding and order made and entered herein October 3rd, 1932, finds:

That sufficient cause has not been made to appear in said applications, or either of them, for such rehearing.

It is, therefore, ordered, That the said applications of the said City of Columbus and said The Columbus Gas and Fuel Company, asking, for the reasons and upon the grounds set forth therein, a rehearing with respect to the matters and things decided and determined by the finding and order made herein October 3rd, 1932, be, and hereby such applications, and each of them, are denied.

To which order of the Commission denying their said applications for rehearing, the said City of Columbus and said The Columbus Gas and Fuel Company each then excepted, and here now except, and their exceptions here are noted of record.

And the Commission coming now to fix a date for the going into effect of the finding and order made and entered herein October 3rd, 1932, the effective date of which is now fixed at December 1st, 1932, now therefore, be it,

Ordered, That if either party hereto, within the period prescribed by statute, shall appeal from said finding and order to the Supreme Court, the effective date of the finding and order made and entered herein October 3rd, 1932, be, and hereby the same is extended to February 1st, 1933, or such earlier date as the Supreme Court of Ohio may order. To which order of the Commission, the City of Columbus, and said The Columbus Gas and Fuel Company, and each of them, then excepted, here now except, and their exceptions here are noted of record.

The Public Utilities Commission of Ohio, E. J. Hopple, Chairman; Frank W. Geiger, Commissioners. (Seal.)

Dated at Columbus, Ohio, this 28th day of November, 1932.

A true copy:

Ire E. Sprankle, Superintendent of Investigation.

[fol. 324] Copy

BEFORE PUBLIC UTILITIES COMMISSION OF OHIO.

No. 5935

[Title omitted]

ORDER TRANSMITTING PAPERS

The Columbus Gas and Fuel Company, Plaintiff in Error, having appealed from the orders of said The Public Utilities Commission of Ohio in Proceeding No. 5935, being In the matter of the Complaint and Appeal of The Columbus Gas and Fuel Company from an Ordinance of the City of Columbus, Ohio, to regulate the price that may be charged for natural gas in the City of Columbus—it is hereby ordered, That the original filings, the entries and orders of the Commission, a transcript of the docket entries and the proceedings and testimony adduced upon the hearings before the Commission, together with the exhibits, be forthwith transmitted to the Clerk of the Supreme Court of Ohio.

The Public Utilities Commission of Ohio, E. J. Hopple, Chairman; Frank W. Geiger, Commissioners.

Dated at Columbus, Ohio, this twenty seventh day of January, 1933.

—— ——, Superintendent of Investigation.

[fol. 325] IN SUPREME COURT OF OHIO

No. 23864

Title

THE COLUMBUS GAS & FUEL COMPANY

v.

THE PUBLIC UTILITIES COMMISSION OF OHIO (The City of Columbus, Henry W. Worley, Mayor)

Action: Error to the Public Utilities Commission of Ohio.

Attorneys for plaintiff: Edward C. Turner, Albert M. Calland, Columbus, Ohio; for defendants: Gilbert Bettman and John W. Bricker, his successor; T. J. Herbert and Don C. Powers, his successor; John L. Davies, James M. Butler, James W. Huffman, Columbus, Ohio.

Memoranda of Pleadings, etc., Filed, Writs Issued, Judgments, Orders and Decrees

DOCKET AND JOURNAL ENTRIES

1932

November 29. Petition in Error, 9, Waiver of Summons and Entry of Appearance filed.

" 29. Statement of interested parties filed.

December 1. Additional Waiver of Summons filed.

" 29. Plaintiff's printed brief filed. 12-30-32 proof of service filed.

" 30. Plaintiff's printed brief and plaintiff's printed reply brief used before Public Utilities Commission of Ohio filed.

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January 24. Application of Toothaker & Rodenfels for extension of time to file printed brief of City of Columbus filed.

January 24. Application for extension of time to file printed brief of City of Columbus granted to February 7, 1933. Carl V. Weygandt, c.j. J.33 p. 87.

January 30. Complete file from Public Utilities Commission filed.

February 3. Application of City of Columbus to be made a party defendant filed.

" 3. Order granting City of Columbus the right to intervene. E. S. Matthias, J. J.33-p.96.

[fol. 326]

1933.

February 7. Printed Answer Brief of City of Columbus filed. 2-8-33 proof of service filed.

February 27. Printed Reply Brief of Columbus Gas & Fuel Company filed. 2-28-33 proof of service filed.

March 14. Printed appendices to briefs on behalf of City of Columbus, 9, filed.

March 14. Printed petition in error of The Columbus Gas & Fuel Company, etc. filed.

March 14. Printed Cross-examination of Harry R. Allensworth and proof of service filed.

April 25. Order consolidating cases numbers 23864, 23867 and 23868. Carl V. Weygandt, C. J., j.33 p. 160.

June 21. Order Reversed. j. 33 p. 224.

July 17. Application for rehearing, 15, filed.

September 20. Rehearing Denied. j. 33 p. 250.

" 20. Mandate Issued.

" 20. Motion for severance by plaintiff in error filed, and acknowledgment of service filed.

" 20. Summons and Severance and acknowledgment of service filed.

" 20. Petition for Appeal, assignment of errors and prayer for reversal filed.

" 20. Statement of grounds of jurisdiction filed.

" 27. Order granting severance filed.

" 28. Order staying mandate issued to Public Utilities Commission until disposition of cause in United States Supreme Court. Carl V. Weygandt, C.J. j. 33 p. 258.

" 28. Order allowing appeal filed.

" 28. Appeal Bond signed by Columbus Gas & Fuel Co., as principal and American Surety Company of N. Y. as surety filed and approved by C.J.

" 28. Supersedeas bond signed by Columbus Gas & Fuel Co. as principal and Columbia Gas & Electric Corporation as surety approved by Chief Justice and filed.

" 28. Citation and acknowledgment of Service filed.

" 28. Order approving security and granting supersedeas filed.

[fol. 327]

1933.

September 28. Agreement impounding fund approved by Chief Justice and filed.

September 28. Entry staying execution of mandate filed.

September 30. Proof of service of papers under Rule 12 Paragraph 2 of Rules of Supreme Court of United States filed.

October 21. Duplicate receipt from Ohio National Bank of excess collections deposited Oct. 20, 1933 by Columbus Gas & Fuel Co. in amount of $4,312.98 filed.

November 3. Order extending time to December 1, 1933 for docketing cause in Supreme Court of United States. Carl V. Weygandt, C.J. j. 33 p. 290.

November 21. Duplicate receipt from Ohio National Bank of excess collections deposited November 20, 1933 by Columbus Gas & Fuel Co. in amount of $18,374.25 filed.

November 25. Precipes for Transcript of Record of Cols. Gas & Fuel Co. and City of Columbus and acknowledgment of service filed.

November 25. Orders transmitting original Exhibits filed.

Journal Entries

January 24, 1933.—Upon application of Toothaker & Rodenfels, Printers, and for good cause shown, it is ordered that the time for filing printed brief of City of Columbus herein be, and the same hereby is extended until 7th day of February, 1933. Carl V. Weygandt, C. J. j. 33 p. 87.

February 3, 1933.—Order Granting Right to Intervene. It has been made to appear to the Court, upon application of the City of Columbus, that said City was a defendant in the proceedings herein before the Public Utilities Commission of Ohio and also that the said City is interested in the determination of this proceeding in error. Therefore, It is ordered that the said City be granted the right to intervene, file briefs and be represented in oral argument before this Court. E. S. Matthias, Judge. O.K. J. W. Bricker. j. 33 p. 96.

April 25, 1933.—Order Consolidating Cases. It is hereby ordered that the above entitled cases, Nos. 23864, 23867 and

23868 be, and the same are hereby consolidated. Carl V. Weygandt, C. J. j. 33 p. 160.

June 21, 1933.—Error to the Public Utilities Commission of Ohio. This cause came on to be heard upon the transcript of the record of the Public Utilities Commission of Ohio and was argued by counsel. On consideration whereof, it is ordered and adjudged by this Court, that the order of the said Public Utilities Commission of Ohio, be, and the same is hereby reversed for the reason that the rate of 55 cents per thousand cubic feet of gas as fixed by said Commission is unlawful and unreasonable and for the further reason that the rate of 48 cents per thousand cubic feet [fol. 328] provided in the ordinance adopted by the City of Columbus is not unlawful nor unreasonable. And the said cause is hereby remanded to the said Public Utilities Commission of Ohio for further proceedings and orders not inconsistent with this entry. Ordered, That a special mandate be sent to the Public Utilities Commission of Ohio, to carry this judgment into Execution. J. 33, p. 224.

September 20, 1933.—It is ordered by the Court that rehearings herein be, and the same hereby are denied. J. 33, p. 250.

September 28, 1933.—Entry. The above entitled consolidated cause having been appealed to the Supreme Court of the United States and a supersedeas having been issued, it is ordered that the execution of the special mandates to The Public Utilities Commission of Ohio heretofore issued herein, be and the same hereby are stayed until disposition of the said cause by the Supreme Court of the United States. Carl V. Weygandt, Chief Justice of the Supreme Court of Ohio. J. 33, p. 258.

November 3, 1933. (Consolidated by Order of the Court dated the 25th day of April, 1933.)—Order Extending Time. On the 28th day of September, 1933, on petition of appellant, The Columbus Gas and Fuel Company was, by the undersigned Chief Justice of the Supreme Court of Ohio, allowed an Appeal in the above entitled case from the Supreme Court of Ohio to the Supreme Court of the United States, and on the same day I signed the citation therein to the Appellee returnable forty days from the above date. It now being shown to me that the record in said cause is voluminous and that the Clerk of the Supreme Court of Ohio cannot by said return day make and transmit to the

Supreme Court of the United States a true copy of the material parts of said record, including the assignments of error and opinions delivered in the case, in accordance with Rule 10 of the Rules of the Supreme Court of the United States, now upon application of the Appellees and because of the above, which is good cause for this order, and in accordance with Rule II of the Rules of the Supreme Court of the United States, I enlarge the time of and for docketing the above entitled case in the Supreme Court of the United States and with its clerk to the 1st day of December, 1933. In Witness Whereof I have hereunto subscribed my name officially at the City of Columbus, Ohio, this 3rd day of November, 1933. Carl V. Weygandt, Chief Justice of the Supreme Court of Ohio. J. 33, p. 290.

Clerk's Certificate to foregoing paper omitted in printing.

[fol. 328a] In Supreme Court of Ohio, January Term, A. D. 1933

No. 23864

The Columbus Gas & Fuel Company

vs.

The Public Utilities Commission of Ohio

Error to the Public Utilities Commission of Ohio

Judgment—June 21, 1933

This cause came on to be heard upon the Transcript of the Record of the Public Utilities Commission of Ohio and was argued by counsel. On consideration whereof, it is ordered and adjudged by this Court that the order of the said Public Utilities Commission of Ohio be, and the same is hereby reversed for the reason that the rate of 55 cents per thousand of cubic feet of gas as fixed by said Commission is unlawful and unreasonable and for the further reason that the rate of 48 cents per thousand cubic feet provided in the ordinance adopted by the City of Columbus is not unlawful nor unreasonable. And said cause is hereby remanded to the said Public Utilities Commission of Ohio

for further proceedings and orders not inconsistent with this entry.

Ordered, That a special mandate be sent to the Public Utilities Commission of Ohio, to carry this Judgment into Execution.

I, Seba H. Miller, Clerk of the Supreme Court of Ohio, do hereby certify that the foregoing entry is truly taken and correctly copied from the Journal of said Court.

Witness my hand and the seal of said Court this 28th day of June, A. D. 1933.

Seba H. Miller, Clerk, by Elliot E. Welch, Deputy.

(Seal The Supreme Court of the State of Ohio.)

[fols. 328b & 329] THE STATE OF OHIO,
City of Columbus:

SUPREME COURT OF OHIO

To the Honorable Public Utilities Commission of Ohio, Greeting:

We do hereby command you, that you proceed, without delay, to carry the within and foregoing judgment of our Supreme Court of Ohio, in the cause of The Columbus Gas & Fuel Co. vs. The Public Utilities Commission of Ohio, into execution, the Petition in Error herein and heretofore granted, to the contrary notwithstanding.

Witness, Seba H. Miller, Clerk of said Supreme Court of Ohio, at Columbus, this 28th day of June, A. D. 1933.

Seba H. Miller, Clerk, by Elliot E. Welch, Deputy.

Docket Fee,	$—.	Paid by	——.
" "	$—.	"	——.
" "	$—.	"	——.
Printing Record,	$—.	"	——.
Sheriff's Costs,	$—.	"	——.
" "	$—.	"	——.

STATE OF OHIO,
City of Columbus, ss:

I, Seba H. Miller, Clerk of the Supreme Court of Ohio, do hereby certify that the foregoing is a true and correct copy of the mandate issued to the Public Utilities Commission of Ohio in the within entitled cause.

Witness my hand and the seal of this Court this 27th day of November, A. D. 1933.

Seba H. Miller, Clerk Supreme Court of Ohio. (Seal The Supreme Court of the State of Ohio.)

[Endorsed:] Supreme Court of the State of Ohio. No. 23864. The Columbus Gas & Fuel Co. vs. The Public Utilities Commission of Ohio. January Term, A. D. 1933. Mandate.

[fol. 330] IN SUPREME COURT OF OHIO

No. 23868

Title

THE CITY OF COLUMBUS, OHIO,

vs.

THE PUBLIC UTILITIES COMMISSION OF OHIO, (THE COLUMBUS GAS & FUEL CO.)

Action: Error to the Public Utilities Commission of Ohio.

Attorneys for plaintiff: John L. Davies, James W. Huffman, James M. Butler, Columbus, Ohio; for defendant: Gilbert Bettman and his successor John W. Bricker, T. J. Herbert and his successor Don C. Powers, Edward C. Turner, A. M. Calland, Columbus; L. K. Langdon, Cincinnati, Ohio; Chester J. Gerkin, New York, N. Y.

Memoranda of Pleadings, etc., Filed, Writs Issued, Judgments, Orders and Decrees

DOCKET AND JOURNAL ENTRIES

1932

December 1. Petition in Error, 9, Waiver of Summons and Entry of Appearance, filed.

December 2. Statement of interested parties filed.

December 23. Entry extending time for plaintiff in error to file printed brief to January 17, 1933. E. S. Matthias, Judge. J. 33 p. 72.

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January 13. Entry granting City of Columbus leave to consolidate brief in this case with case #23867. Will P. Stephenson, J. J. 33 p. 81.

January 17. Printed brief of City of Columbus (same as 23867) and affidavit of service filed. 1-18-33 proof of service filed.

January 24. Application of City of Columbus to suspend, vacate or stay final order of Commission and proof of service filed.

January 30. Complete file from P. U. C. O. filed.

January 31. Application of City of Columbus to suspend, vacate or stay final order of Commission denied. J. 33 p. 93.

[fol. 331]

February 16. Printed brief of Columbus Gas & Fuel Co. and affidavit of service filed. 2-17-33 proof of service filed.

March 8. Entry extending time for plaintiff in error to file reply brief to March 10, 1933. R. H. Day, J. J. 33 p. 128.

March 9. Plaintiff's printed reply brief filed. 3-10-33 proof of service filed.

March 14. Printed appendices to briefs on behalf of City of Columbus, 9, filed.

April 25. Order consolidating cases Nos. 23864, 23867 and 23868. Carl V. Weygandt, C. J. J. 33 p. 160.

June 21. Order Reversed. J. 33 p. 224.

July 17. Application for rehearing (15) filed.

September 20. Rehearing denied. J. 33 p. 250.

September 20. Mandate issued.

" 20. Motion for severance by Columbus Gas & Fuel Co. and acknowledgment of service filed, and summons and severance and acknowledgment of service filed.

" 20. Petition for Appeal, assignment of errors and prayer for reversal filed.

" 20. Statement of grounds of jurisdiction filed.

" 27. Order granting severance filed.

" 28. Order allowing appeal filed.

1933

" 28. Appeal bond signed by Columbus Gas & Fuel Co. as principal and American Surety Co. of N. Y, as surety and approved by Chief Justice filed.

" 28. Supersedeas bond signed by Columbus Gas & Fuel Co. as principal and Columbia Gas & Electric Corp. as surety and approved by C. J. filed.

" 28. Citation and acknowledgment of service filed.

" 28. Order approving security and granting supersedeas filed.

" 28. Agreement impounding funds approved by C. J. and filed.

" 28. Entry staying execution of mandate filed.

" 28. Order staying mandate issued to P. U. C. O. until final disposition of cause in United States Supreme Court. Carl V. Weygandt, C. J. J. 33 p. 258.

[fol. 332]

September 30. Proof of service of papers as required by Rule 12 Paragraph 2 of Rules of U. S. Supreme Court filed.

October 21. Duplicate receipt from Ohio National Bank of excess collections deposited October 20, 1933 by Columbus Gas & Fuel Co. in the amount of $4,312.98 filed.

November 3. Order extending time to December 1, 1933, for docketing case in U. S. Supreme Court. Carl V. Weygandt, C. J. J. 33, p. 290.

November 21. Duplicate receipt from Ohio National Bank of excess collections deposited November 20, 1933 by Columbus Gas & Fuel Co. in the amount of $18,374.25 filed.

November 25. Precipes for transcript of record of Columbus Gas & Fuel Co. and City of Columbus and acknowledgment of service filed.

November 25. Orders transmitting original exhibits filed.

Journal Entries

December 23, 1932.—Entry. Upon application of Toothaker & Rodenfels and for good cause shown it is ordered

that the time for filing plaintiff's printed briefs herein be, and the same hereby is, extended until 17th day of January, 1933. Enter: Edward S. Matthias, Judge. J. 32 p. 72.

January 13, 1933.—Order to Consolidate Briefs. It has been made to appear to the Court that the errors assigned in the first above entitled cause, No. 23867, are repeated in the second case, No. 23868, and that the City of Columbus, Plaintiff in error in both cases, desires to avoid a multiplicity of briefs, Therefore, upon the application of the City, it is ordered, that said City be authorized and directed to file one brief covering the two cases, under the double title of the two cases as above indicated. Will P. Stephenson, Judge. J. 33 p. 81.

January 31, 1933.—Application of plaintiff in error to suspend stay or vacate final order of Public Utilities Commission. It is ordered by the Court that this application be, and the same hereby is, denied. The procedure for error proceedings from the orders of the Public Utilities Commission is prescribed and controlled by statute, and no authority is hereby conferred upon this Court for the suspension of the order herein involved, or to make any order therein, except upon the submission of the case upon its merits. Enter: Carl V. Weygandt, C. J. J. 33 p. 93.

March 8, 1933.—Entry. Upon application of Toothaker & Rodenfels, and for good cause shown, it is ordered that the time for filing reply brief of plaintiff in error herein be, and the same hereby is extended until 10th day of March 1933. Enter: Robert H. Day, J. J. 33 p. 128.

[fol. 333] April 25, 1933.—Order consolidating cases. It is hereby ordered that the above entitled cases, Nos. 23864, 23867 and 23868 be, and the same are hereby consolidated. Carl V. Weygandt, C. J. J. 33. p. 160.

June 21, 1933.—Error to the Public Utilities Commission of Ohio. This cause came on to be heard upon the transcript of the record of the Public Utilties Commission of Ohio and was argued by counsel. On consideration whereof, it is ordered and adjudged by this Court, that the order of the said Public Utilities Commission of Ohio, be, and the same is hereby, reversed for the reason that the rate of 55 cents per thousand of cubic feet of gas, as fixed by said Commission, is unlawful and unreasonable and for the further reason that the rate of 48 cents per thousand cubic feet provided in the ordinance adopted by the City of Co-

lumbus is not unlawful nor unreasonable and the said cause is hereby remanded to the said Public Utilities Commission of Ohio for further proceedings and orders not inconsistent with this entry. Ordered, That a special mandate be sent to the Public Utilities Commission of Ohio, to carry this judgment into execution. J. 33 p. 224.

September 20, 1933.—It is ordered by the Court that rehearings herein be and the same hereby are denied. J. 33, p. 250.

September 28, 1933.—Entry. The above entitled consolidated cause having been appealed to the Supreme Court of the United States and a supersedeas having issued, it is ordered that the execution of the special mandates to The Public Utilities Commission of Ohio heretofore issued herein, be and the same hereby are stayed until disposition of the said cause by the Supreme Court of the United States. Carl V. Weygandt, Chief Justice of the Supreme Court of Ohio. J. 33, p. 258.

November 3, 1933.—Order Extending Time. (Consolidated by Order of the Court dated the 25th day of April, 1933.) On the 28th day of September, 1933, on petition of appellant, The Columbus Gas and Fuel Company was, by the undersigned Chief Justice of the Supreme Court of Ohio, allowed an appeal in the above entitled case from the Supreme Court of Ohio to the Supreme Court of the United States, and on the same day I signed the citation therein to the Appellee returnable forty days from the above date. It now being shown to me that the record in said case is voluminous and that the Clerk of the Supreme Court of Ohio cannot by said return day make and transmit to the Supreme Court of the The United States a true copy of the material parts of said record, including the assignments of error and opinions delivered in the case, in accordance with Rule 10 of the Rules of the Supreme Court of the United States, now upon application of the Appellees, and because of the above, which is good cause for this order, and in accordance with Rule II of the Rules of the Supreme Court of the United States, I enlarge the time of and for docketing the above entitled case in the Supreme Court of the United States and with its Clerk to the 1st day December, 1933. In Witness Whereof I have hereunto subscribed my name officially at the City of Columbus, Ohio, this 3rd

day of November, 1933, Carl V. Weygandt, Chief Justice of the Supreme Court of Ohio. J. 33, p. 290.

Clerk's Certificate to foregoing paper omitted in printing.

[fol. 333a] IN SUPREME COURT OF OHIO, JANUARY TERM A. D. 1933

No. 23868

CITY OF COLUMBUS

vs.

THE PUBLIC UTILITIES COMMISSION OF OHIO

Error to the Public Utilities Commission of Ohio

JUDGMENT—June 21, 1933

This cause came on to be heard upon the transcript of the Record of the Public Utilities Commission of Ohio and was argued by counsel. On consideration whereof, it is ordered and adjudged by this Court, that the order of the said Public Utilities Commission of Ohio be, and the same is hereby, reversed for the reason that the rate of 55 cents per thousand of cubic feet of gas, as fixed by said Commission, is unlawful and unreasonable and for the further reason that the rate of 48 cents per thousand cubic feet provided in the ordinance adopted by the City of Columbus is not unlawful nor unreasonable and the said cause is hereby remanded to the said Public Utilities Commission of Ohio for further proceedings and orders not inconsistent with this entry.

Ordered, That a special mandate be sent to the Public Utilities Commission of Ohio, to carry this Judgment into Execution.

I, Seba H. Miller, Clerk of the Supreme Court of Ohio, do hereby certify that the foregoing entry is truly taken and correctly copied from the Journal of said Court.

Witness my hand and the seal of said Court this 28th day of June A, D. 1933.

Seba H. Miller, Clerk, by Elliot E. Welch, Deputy.
(Seal.)

[fols. 333b & 334] SUPREME COURT OF OHIO

THE STATE OF OHIO,
City of Columbus:

To the Honorable Public Utilities Commission of Ohio, Greeting:

We do hereby command you, that you proceed, without delay, to carry the within and foregoing judgment of our Supreme Court of Ohio, in the cause of City of Columbus vs. The Public Utilities Commission of Ohio into execution, the Petition in Error herein and heretofore granted, to the contrary notwithstanding.

Witness, Seba H. Miller, Clerk of said Supreme Court of Ohio, at Columbus, this 28th day of June, A. D. 1933.

Seba H. Miller, Clerk, by Elliot E. Welch, Deputy.

Docket Fee, $—. Paid by —— ——.
Docket Fee, $—. Paid by —— ——.
Docket Fee, $—. Paid by —— ——.
Printing Record, $—. Paid by —— ——.
Sheriff's Costs, $—. Paid by —— ——.
Sheriff's Costs, $—. Paid by —— ——.

STATE OF OHIO,
City of Columbus, ss:

I, Seba H. Miller, Clerk of the Supreme Court of Ohio, hereby certify that the foregoing is a true and correct copy of the mandate issued to the Public Utilities Commission of Ohio in the within entitled cause.

Witness my hand and the seal of this Court this 27th day of November, A. D. 1933.

Seba H. Miller, Clerk Supreme Court of Ohio. (Seal.)

[Endorsed:] Supreme Court of the State of Ohio. No. 23868. City of Columbus vs. The Public Utilities Commission of Ohio. January Term, A. D. 1933. Mandate.

[fol. 335] IN SUPREME COURT OF THE UNITED STATES

No. 23864

No. 23868

[Title omitted]

Consolidated by Order of the Court dated the 25th day of April, 1933

PRÆCIPE FOR TRANSCRIPT AND ACKNOWLEDGMENT OF SERVICE —Filed Nov. 25, 1933

To the Clerk of the Supreme Court of Ohio:

You are hereby requested to make a transcript of record to be filed in the Supreme Court of the United States, pursuant to an order of appeal allowed in the above entitled cause, and to include in such transcript of record the following papers and exhibits, to-wit:

1. Petition in Error filed November 29, 1932 by The Columbus Gas and Fuel Company.
2. Petition in Error filed December 1, 1932 by the City of Columbus, Ohio.
3. Application of the City of Columbus to be made a party defendant in Case No. 23864.
4. Order dated February 3, 1933 granting the City of Columbus the right to intervene in Case No. 23864.
5. Order of April 25, 1933 consolidating Cases Nos. 23864, 23867 and 23868.
6. Journal entry dated June 21, 1933 reversing the order of The Public Utilities Commission of Ohio in Case No. 23864.
7. Journal entry dated June 21, 1933 reversing the order of The Public Utilities Commission of Ohio in Case No. 23868.

[fol. 336] 8. Opinion of the Supreme Court of Ohio in Cases Nos. 23864, 23867 and 23868, dated June 21, 1933.

9. Application for rehearing in Cases Nos. 23864 and 23868 filed July 17, 1933 by The Columbus Gas and Fuel Company.

10. Journal entry dated the 20th day of September, 1933, denying the application of The Columbus Gas and Fuel Company for rehearing in Cases Nos. 23864 and 23868.

11. Mandates issued on the 20th day of September, 1933, to The Public Utilities Commission of Ohio in Cases Nos. 23864 and 23868.

12. Motion for Severance, filed September 20th, 1933.

12-A. Notice of Summons and Severance.

13. Order Granting Severance, dated September 27, 1933.

14. Petition for Appeal, Assignment of Errors and Prayer for Reversal, filed the 20th day of September, 1933, by The Columbus Gas and Fuel Company.

15. Statement of Grounds of Jurisdiction, filed the 20th day of September, 1933.

16. Order Allowing Appeal, dated the 28th day of September, 1933.

17. Bond for Costs on Appeal, filed and approved September 28, 1933.

18. Citation and Proof of Service filed the 29th day of September, 1933.

19. Supersedeas bond filed and approved September 28, 1933.

20. Impounding Agreement filed and approved September 28, 1933.

21. Order Allowing Supersedeas, dated the 28th day of September, 1933.

22. Order Staying Execution of Mandates, dated September 28, 1933.

23. Service of Papers under Rule 12 of Supreme Court of United States and acknowledgment of service, filed September 30, 1933.

24. Complaint and Appeal filed by The Columbus Gas and Fuel Company before The Public Utilities Commission of Ohio, December 31, 1929.

25. Stipulation of parties as to corporate capacity and nature of business of The Columbus Gas and Fuel Company; the passage by the City of Columbus of Ordinance No. 645-29; the submission of said Ordinance to a vote of the electors of the City of Columbus, Ohio; the non-acceptance of Ordinance No. 645-29 by The Columbus Gas and Fuel Company; and the day certain for ascertaining and stating inventories, reproduction costs, depreciations, values, calculations, rate bases, incomes and expenses.

26. Subpœna duces tecum filed January 5, 1931 by The Columbus Gas and Fuel Company for L. A. Seyffert, Treasurer of The Ohio Fuel Gas Company.

[fol. 337] 27. Entry dated January 21, 1931, of The Public Utilities Commission of Ohio sustaining motions filed with The Public Utilities Commission of Ohio by the Cty of Columbus for

(a) Detail of unit costs used in appraising the property of The Ohio Fuel Gas Company;

(b) An allocation of the property of The Ohio Fuel Gas Company; and.

(c) An inventory and appraisal of the property of United Fuel Gas Company.

28. Application and Motion filed by the City of Columbus, Ohio with The Public Utilities Commission of Ohio for enforcement of the entry of January 21, 1931.

29. Entry dated April 25, 1931 of The Public Utilities Commission of Ohio directing The Columbus Gas and Fuel Company to file a copy of the record in the case of United Fuel Gas Company before the Public Service Commission of West Virginia.

30. Order of The Public Utilities Commission dated October 3, 1932.

31. Opinion of The Public Utilities Commission, dated October 3, 1932.

32. Opinion of Minority Commissioner, dated October 3, 1932.

33. Application by Petition for Rehearing, filed November 1, 1932 by The Columbus Gas & Fuel Company with The Public Utilities Commission of Ohio.

34. Protest of Valuations, filed November 1, 1932 by The Columbus Gas and Fuel Company with The Public Utilities Commission of Ohio.

35. Entry of The Public Utilities Commission of Ohio, dated November 1, 1932, assigning for hearing on November 8, 1932, the protest to the valuation.

36. Entry of The Public Utilities Commission of Ohio, dated Nov. 4, 1932, assigning for hearing on November 9, 1932, the application for rehearing.

37. Entry of The Public Utilities Commission of Ohio, dated Nov. 28, 1932 overruling the Protest of Valuation and denying the Application for Rehearing.

38. Entry of The Public Utilities Commission of Ohio, dated January 27, 1933, transmitting the record to the Supreme Court of Ohio.

39. The following pages of the Transcript of Proceedings and Testimony before The Public Utilities Commission of Ohio:

[fol. 338] Subject: Qualification of Witnesses

L. E. Welker and Assistants:

Top of p. 31 to the period in line 8 on p. 34.
Line 26 on p. 105 to and including line 2 on p. 106.
Line 29 on p. 109 to and including line 23 on p. 110.
Line 3 on p. 112 to and including line 16 on p. 118.
Line 10 on p. 119 to and including line 18 on p. 129.

L. A. Seyffert:

P. 138.

Frank W. Phillips:

P. 211 to and including line 17.

James P. Strickler:

Line 13 on p. 669 to and including line 14 on p. 671.

B. L. Wheeler:

P. 1012 to and including line 11 on p. 1014.

Arthur S. Dewing:

P. 1033 to and including line 6 on p. 1035.

F. C. Hamilton:

Line 13 on p. 1111 to and including line 3 on p. 1113.

C. J. Weaver:

Line 14 on p. 1933 to and including line 15 on p. 1934.

P. Antonelli:

Line 18 on p. 1974 to and including line 17 on p. 1977.

F. H. Lerch:

Line 15 on p. 2253 to and including line 12 on p. 2257.

A. B. Dally, Jr.:

Line 14 on p. 2983 to and including line 5 on p. 2989.

George Witmer, Jr.:

P. 3092 to and including line 18 on p. 3096.
Line 26 on p. 3096 to and including line 10 on p. 3097.

Samuel W. Meals:

Line 14 on p. 3175 to and including line 12 on p. 3180.

[fol. 339] D. S. Weber:

P. 3248 to and including line 19 on p. 3249.

E. E. Roth:

Line 13 on p. 3316 to and including line 6 on p. 3317.

Earl L. Carter:

P. 4862 to and including line 12 on p. 4863.

John E. Kelley:

Line 19 on p. 5078 to and including line 10 on p. 5079.

Leon J. Pepperberg:

P. 5212.

Thomas R. Weymouth:

P. 5251 to and including line 8 on p. 5252.

Harry R. Allensworth:

Line 5 on p. 3402 to and including line 19 on p. 3406.
Line 4 on p. 3652 to and including line 8 on p. 3652.
Line 10 on p. 3711 to and including line 21 on p. 3711.
Line 12 on p. 3932 to and including p. 3936.
Line 10 on p. 3938 to and including line 3 on p. 3953.
Top of p. 3958 to and including line 17 on p. 3960.
Line 26 on p. 3966 to and including line 21 on p. 3967.
Top of p. 3994 to and including line 25 on p. 3996.
Line 11 on p. 4003 to and including line 24 on p. 4024.
Line 10 on p. 4026 to and including line 14 on p. 4040.
Line 23 on p. 4121 to and including line 8 on p. 4123.
Line 11 on p. 4163 to and including the first two words in line 21 on p. 4163.

Phillip Burgess:

Top of p. 3733 to and including line 23 on p. 3735.
Line 6 on p. 3736 to and including line 9 on p. 3737.
Line 21 on p. 3743 to and including line 4 on p. 3744.
Line 25 on p. 3746 to and including line 10 on p. 3747.
Line 13 on p. 3777 to and including line 7 on p. 3781.
Line 8 on p. 3784 to and including line 6 on p. 3785.
Line 18 on p. 3787 to and including bottom of page.
Top of p. 3789 to and including line 14 on p. 3789.
Line 21 on p. 3790 to the bottom of p. 3791.
Lines 28 & 29 on p. 3792.
Line 24 on p. 3797 to and including line 4 on p. 3798.
Line 28 on p. 3798 to and including line 11 on p. 3799.
Line 24 on p. 3802 to and including line 9 on p. 3805.
Line 28 on p. 3832 to and including line 14 on p. 3835.
Top of p. 3840 to and including line 17 on p. 3840.
Line 9 on p. 3852 to and including line 27 on p. 3852.
Line 16 on p. 3854 to and including line 28 on p. 3854.

J. Paul Blundon:

Top of p. 4324 to and including line 21 on p. 4330.
Line 20 on p. 4340 to and including line 1 on p. 4341.
Line 26 on p. 4404 to and including line 25 on p. 4407.
Line 29 on p. 4443 to and including line 12 on p. 4444.

[fol. 340] Subject: Valuation and Operating Expenses

The Columbus Gas and Fuel Company

Line 17 on p. 35 to and including line 12 on p. 37.
Line 22 on p. 40 to and including line 19 on p. 41.
Line 2 on p. 42 to and including line 22 on p. 42.
Line 19 on p. 58 to and including line 23 on p. 58.
Line 12 on p. 105 to and including line 17 on p. 105.
Line 7 on p. 240 to and including line 22 on p. 241.
Top of p. 217 to and including line 8 on p. 218.
Top of p. 220 to and including line 8 on p. 221.
Top of p. 228 to and including line 3 on p. 229.
Line 29 on p. 229 to and including line 1 on p. 230.
Line 23 on p. 114 to and including line 20 on p. 115.
Top of p. 234 to and including bottom of p. 239.
Line 6 on p. 354 to and including line 5 on p. 415.
Top of p. 543 to and including line 5 on p. 578.

Line 18 on p. 580 to and including line 13 on p. 584.
Line 24 on p. 584 to and including line 27 on p. 668.
Line 18 on p. 678 to and including line 27 on p. 678.
Line 19 on p. 680 to and including line 16 on p. 682.
Line 23 on p. 693 to and including line 15 on p. 694.
Line 14 on p. 5361 to and including line 17 on p. 5363.
Top of p. 139 to and including line 2 on p. 142.
Line 28 on p. 152 to and including line 13 on p. 153.
Line 15 on p. 155 to and including line 12 on p. 156.
Line 11 on p. 157 to and including line 28 on p. 157.
Line 6 on p. 158 to and including line 25 on p. 159.
Line 14 on p. 160 to and including line 2 on p. 161.
Line 12 on p. 162 to and including line 14 on p. 162.
Top of p. 170 to and including line 7 on p. 171.
Top of p. 172 to and including line 18 on p. 175.
Line 25 on p. 175 to and including line 29 on p. 175.
Line 8 on p. 176 to and including line 12 on p. 176.
Line 21 on p. 177 to and including line 21 on p. 181.
Line 12 on p. 1121 to and including line 27 on p. 1122.
Line 23 on p. 181 to and including line 9 on p. 184.
Line 24 on p. 187 to and including line 26 on p. 187.
Line 13 on p. 190 to and including line 17 on p. 190.
Line 8 on p. 191 to and including bottom of p. 202.
Line 21 on p. 256 to and including line 13 on p. 259.
Line 22 on p. 1905 to and including line 11 on p. 1914.
Line 10 on p. 3431 to and including line 12 on p. 3431.
Line 7 on p. 3432 to and including line 6 on p. 3438.
Line 24 on p. 3448 to and including line 4 on p. 3449.
Line 17 on p. 3729 to and including line 22 on p. 3730.
Line 10 on p. 4118 to and including line 8 on p. 4121.
Line 16 on p. 3605 to and including line 29 on p. 3605.
Line 4 on p. 3676 to and including line 18 on p. 3676.
Line 10 on p. 4282 to and including line 18 on p. 4282.
Line 26 on p. 4192 to and including line 7 on p. 4193.
Line 23 on p. 4212 to and including line 11 on p. 4213.
Line 14 on p. 4347 to and including bottom of p. 3151.

Subject: Valuation and Operating Expenses

The Ohio Fuel Gas Company

Top of p. 814 to and including line 13 on p. 835.
Line 10 on p. 854 to and including line 15 on p. 857.
Line 16 on p. 862 to and including line 11 on p. 863.

Line 28 on p. 866 to and including line 7 on p. 867.
Line 10 on p. 869 to and including line 19 on p. 869.
Line 25 on p. 869 to and including line 22 on p. 870.
Top of p. 871 to and including line 7 on p. 872.
Top of p. 873 to and including line 7 on p. 877.
Line 20 on p. 278 to and including line 15 on p. 282.
Line 13 on p. 285 to and including line 19 on p. 289.
Line 25 on p. 289 to and including line 6 on p. 293.

[fol. 341] Subject: Rate of Return

Line 11 on p. 1204 to and including line 20 on p. 1205.
Line 7 on p. 1356 to and including line 7 on p. 1357.
Top of p. 1331 to and including line 7 on p. 1355.
Line 22 on p. 3711 to and including line 25 on p. 3711.
Line 25 on p. 3712 to and including line 26 on p. 3713.
Line 26 on p. 3714 to and including line 5 on p. 3715.
Line 18 on p. 3715 to and including line 19 on p. 3715.
Line 27 on p. 3715 to and including line 3 on p. 3716.
Line 26 on p. 3718 to and including line 18 on p. 3721.
Line 16 on p. 3724 to and including line 19 on p. 3727.

Subject: Gas Leaseholds

The Ohio Fuel Gas Company

Necessity for Reserves, Value, Delay Rentals

Line 11 on p. 1917 to and including line 12 on p. 1923.
Line 6 on p. 2093 to and including bottom of p. 2099.
Line 9 on p. 2118 to and including first line on p. 2122.
Top of p. 2124 to and including line 5 on p. 2127.
Line 4 on p. 5146 to and including line 6 on p. 5146.
Line 11 on p. 5147 to and including line 4 on p. 5151.
Line 13 on p. 5152 to and including line 2 on p. 5158.
Line 26 on p. 5205 to and including line 4 on p. 5209.
Line 27 on p. 5210 to the bottom of p. 5211.
Line 10 on p. 5304 to and including line 22 on p. 5309.
Line 4 on p. 5341 to and including line 22 on p. 5344.
Line 8 on p. 5346 to and including line 22 on p. 5347.
Top of p. 5358 to and including line 21 on p. 5356.
Line 8 on p. 5364 to the bottom of p. 5364.
Line 19 on p. 5632 to and including line 14 on p. 5634.
Line 6 on p. 2989 to and including line 5 on p. 3008.
Line 7 on p. 3021 to and including line 25 on p. 3049.

Line 21 on p. 3053 to the bottom of p. 3091.
Line 11 on p. 3097 to and including line 10 on p. 3110.
Line 9 on p. 3111 to and including line 20 on p. 3112.
Line 6 on p. 3116 to and including line 11 on p. 3147.
Line 15 on p. 3148 to and including line 21 on p. 3174.
Line 28 on p. 3179 to and including line 6 on p. 3201.
Line 7 on p. 3205 to and including line 20 on p. 3215.
Line 6 on p. 3216 to and including line 10 on p. 3216.
Line 22 on p. 3217 to the bottom of p. 3247.
Line 20 on p. 3249 to and including line 22 on p. 3256.
Line 28 on p. 3259 to and including line 10 on p. 3272.
Line 17 on p. 3273 to and including line 14 on p. 3288.
Line 6 on p. 3289 to and including line 26 on p. 3310.
Line 27 on p. 3310 to and including line 6 on p. 3311.
Line 8 on p. 3314 to and including line 12 on p. 3314.
Line 7 on p. 3317 to and including line 7 on p. 3350.
Line 6 on p. 3351 to and including line 2 on p. 3390.
Line 2 on p. 5260 to and including line 13 on p. 5274.
Line 25 on p. 5295 to the bottom of p. 5299.
Line 3 on p. 5406 to and including line 10 on p. 5410.
Line 7 on p. 5415 to and including line 10 on p. 5418.
Line 15 on p. 5419 to and including line 5 on p. 5425.
Line 8 on p. 5426 to and including line 11 on p. 5430.
Top of p. 4559 to and including line 2 on p. 4570.
Line 7 on p. 4571 to and including line 2 on p. 4587.
Line 19 on p. 4505 to and including line 4 on p. 4508.
Line 28 on p. 4514 to and including line 17 on p. 4515.
Line 18 on p. 5243 to and including line 21 on p. 5243.

[fol. 342] Subject: Amortization—Depletion

The Ohio Fuel Gas Company

Line 20 on p. 998 to the bottom of p. 1002.
Line 9 on p. 1004 to and including line 15 on p. 1006.
Line 18 on p. 2121 to and including line 27 on p. 2121.
Line 5 on p. 2331 to the bottom of p. 2331.
Line 23 on p. 2589 to and including line 26 on p. 2590.
Line 11 on p. 2798 to and including line 27 on p. 2798.
Line 24 on p. 5195 to and including line 10 on p. 5198.
Line 13 on p. 5292 to and including line 24 on p. 5295.
Line 11 on p. 5418 to and including line 14 on p. 5419.
Line 7 on p. 6425 to and including line 7 on p. 5426.

Subject: Gas Well Depreciation

Line 7 on p. 4344 to and including line 5 on p. 4346.
Line 8 on p. 4352 to and including line 21 on p. 4353.
Line 28 on p. 4354 to and including line 24 on p. 4357.
Line 7 on p. 4408 to and including line 11 on p. 4426.
Line 19 on p. 2271 to and including line 13 on p. 2288.
Line 7 on p. 5213 to and including line 5 on p. 5250.
Line 4 on p. 5365 to and including line 7 on p. 5367.
Line 10 on p. 5376 to and including line 4 on p. 5391.
Line 5 on p. 5431 to and including line 23 on p. 5469.
Line 3 on p. 5487 to and including line 17 on p. 5491.
Line 17 on p. 5252 to and including line 1 on p. 5260.
Line 18 on p. 5277 to and including line 12 on p. 5292.
Line 13 on p. 5393 to and including line 2 on p. 5406.
Line 11 on p. 5410 to and including line 7 on p. 5413.
Line 11 on p. 5418 to and including line 14 on p. 5419.

Subject: Cost of Organization

The Ohio Fuel Gas Company

Line 16 on p. 24 to and including line 23 on p. 24 of Co. Ex. 45.
Line 4 on p. 2345 to and including line 5 on p. 2348.

Subject: Cost of Financing

The Ohio Fuel Gas Company

Line 8 on p. 25 to and including line 13 on p. 25 of Co. Ex. 45.
Line 16 on p. 2354 to and including line 24 on p. 2358.

Subject: Going Concern Value

The Ohio Fuel Gas Company

Line 6 on p. 860 to and including line 10 on p. 860.
Line 15 on p. 2159 to and including line 10 on p. 2171.
Line 19 on p. 2173 to and including line 24 on p. 2203.
Line 27 on p. 2209 to the bottom of p. 2212.
Line 28 on p. 2213 to and including line 25 on p. 2217.
Line 24 on p. 2219 to the bottom of p. 2234.
Line 12 on p. 2291 to and including line 6 on p. 2295.
Top of p. 2312 to and including line 3 on p. 2318.

[fol. 343] Subject: General Overheads

The Ohio Fuel Gas Company

Line 1 on p. 23 to and including word "labor" in line 8 on p. 23 of Co. Ex. 45.
Line 17 on p. 2348 to and including line 5 on p. 2354.
Line 5 on p. 4342 to and including line 6 on p. 4344.
Top of p. 4647 to and including line 1 on p. 4649.
Line 21 on p. 4650 to and including line 23 on p. 4652.
Line 17 on p. 4653 to and including line 17 on p. 4656.
Line 12 on p. 4658 to and including line 24 on p. 4659.

Subject: Working Capital

The Ohio Fuel Gas Company

Line 6 on p. 26 to and including line 12 on p. 26 of Co. Ex. 45.
Line 13 on p. 2010 to and including line 22 on p. 2013.
Line 14 on p. 2137 to and including line 28 on p. 2138.
Line 9 on p. 2336 to and including line 15 on p. 2338.

Subject: Incomplete Construction

The Ohio Fuel Gas Company

Line 13 on p. 26 to and including line 16 on p. 26 of Co. Ex. 45.
Line 28 on p. 2333 to and including line 17 on p. 2334.

Subject: Annual Allowance for Depreciation

The Ohio Fuel Gas Company

Line 25 on p. 4380 to and including line 3 on p. 4381.
Line 14 on p. 4492 to and including line 26 on p. 4492.
Top of p. 4503 to and including line 18 on p. 4505.

[fol. 344] Subject: Allocation

The Ohio Fuel Gas Company

Line 20 on p. 211 to and including line 2 on p. 212.
Line 28 on p. 703 to and including line 14 on p. 705.
Line 18 on p. 1462 to and including line 25 on p. 1462.
Top of p. 1496 to and including line 11 on p. 1496.

Line 14 on p. 1497 to and including line 28 on p. 1507.
Line 18 on p. 1508 to and including line 25 on p. 1515.
Line 5 on p. 1517 to the bottom of p. 1524.
Line 12 on p. 1531 to and including line 6 on p. 1548.
Top of p. 1549 to and including line 14 on p. 1550.
Line 7 on p. 1553 to and including line 15 on p. 1554.
Line 10 on p. 1772 to and including line 3 on p. 1782.
Line 19 on p. 1786 to and including line 28 on p. 1788.
Line 25 on p. 1789 to and including line 10 on p. 1842.
Line 19 on p. 1845 to and including line 7 on p. 1856.
Line 6 on p. 2698 to and including line 3 on p. 2701.
Line 22 on p. 2766 to and including line 9 on p. 2768.
Line 23 on p. 4360 to and including line 21 on p. 4361.
Line 10 on p. 4362 to and including line 11 on p. 4362.
Line 15 on p. 4363 to and including line 6 on p. 4364.
Line 23 on p. 4376 to and including line 20 on p. 4377.
Line 26 on p. 4432 to and including line 16 on p. 4436.
Line 18 on p. 4438 to and including line 13 on p. 4442.
Line 11 on p. 4448 to the bottom of p. 4448.
Line 6 on p. 4451 to and including line 25 on p. 4452.
Line 5 on p. 4454 to and including line 14 on p. 4454.
Line 15 on p. 4455 to and including line 16 on p. 4456.
Line 16 on p. 4457 to and including line 24 on p. 4458.
Line 15 on p. 4463 to and including line 19 on p. 4465.
Line 12 on p. 4466 to and including line 7 on p. 4469.
Line 18 on p. 4470 to and including line 7 on p. 4471.
Line 22 on p. 4472 to and including line 15 on p. 4473.
Line 29 on p. 4485 to and including line 19 on p. 4486.
Line 16 on p. 4487 to and including line 22 on p. 4487.
Line 4 on p. 4488 to and including line 21 on p. 4488.
Line 23 on p. 4726 to and including line 23 on p. 4727.
Line 21 on p. 4741 to and including line 20 on p. 4742.
Line 9 on p. 4753 to and including line 15 on p. 4753.
Line 13 on p. 4863 to and including line 27 on p. 4867.
Line 19 on p. 4876 to and including line 22 on p. 4883.
Line 21 on p. 4891 to and including line 10 on p. 4894.
Line 15 on p. 4900 to and including line 3 on p. 4901.
Top of p. 4906 to and including line 9 on p. 4907.
Line 6 on p. 4911 to and including line 18 on p. 4913.
Line 6 on p. 4916 to and including line 23 on p. 4919.
Line 28 on p. 4920 to the bottom of p. 4921.
Line 15 on p. 4925 to and including line 24 on p. 4928.
Line 17 on p. 4930 to and including line 22 on p. 4933.

Line 20 on p. 4934 to and including line 14 on p. 4935.
Line 10 on p. 4936 to and including line 12 on p. 4947.
Line 26 on p. 4975 to and including line 14 on p. 4980.
Line 24 on p. 4984 to and including line 28 on p. 4989.
Line 17 on p. 5006 to and including line 2 on p. 5007.
Line 5 on p. 5855 to and including line 20 on p. 5862.
Line 11 on p. 5866 to the bottom of p. 5869.
Line 24 on p. 5870 to and including line 1 on p. 5872.

[fol. 345] Subject: Valuation and Operating Expenses

The United Fuel Gas Company

Line 3 on p. 1008 to and including line 18 on p. 1008.
Line 15 on p. 1011 to and including line 17 on p. 1011.
Line 20 on p. 1623 to and including line 23 on p. 1624.
Line 8 on p. 1626 to and including line 20 on p. 1626.
Top of p. 1636 to and including line 20 on p. 1641.
Line 15 on p. 1644 to and including line 20 on p. 1646.
Top of p. 1696 to and including line 23 on p. 1698.
Line 13 on p. 2237 to and including line 22 on p. 2238.
Line 22 on p. 4366 to and including line 11 on p. 4373.
Line 12 on p. 4517 to and including line 11 on p. 4518.
Line 15 on p. 4634 to and including line 14 on p. 4643.

Subject: Gas Leaseholds

United Fuel Gas Company

Necessity for Reserves, Value, Delay Rentals

Line 25 on p. 1668 to and including line 6 on p. 1669.
Line 9 on p. 1694 to and including line 16 on p. 1694.
Line 28 on p. 1734 to the bottom of p. 1737.
Top of p. 5078 to and including line 14 on p. 5109.
Line 11 on p. 5110 to the bottom of p. 5145.

The following pages from Co. Ex. No. 102:

Line 7 on p. 754 to and including line 13 on p. 799.
Line 11 on p. 807 to and including line 7 on p. 842.
Top of p. 872 to the bottom of p. 909.
Top of p. 949 to the bottom of p. 968.
Line 9 on p. 1078 to the bottom of p. 1116.
Top of p. 1157 to the bottom of p. 1183.

Subject: Amortization—Depletion

United Fuel Gas Company

The following pages from Company Ex. No. 105:

Line 16 on p. 2691 to and including line 11 on p. 2693.

Subject: Going Concern Value

United Fuel Gas Company

The following pages from Co. Exs. 101 and 102:

Line 12 on p. 230 to and including line 16 on p. 249.
Top of p. 1207 to the bottom of p. 1230.

The following pages from Co. Ex. 105:

Line 11 on p. 2662 to and including line 5 on p. 2663.
Line 14 on p. 2688 to and including line 9 on p. 2690.

[fol. 346] Subject: Labor Performance

The Columbus Gas and Fuel Company

Line 21 on p. 3508 to and including line 5 on p. 3509.
Line 13 on p. 5564 to and including line 13 on p. 5566.
Line 5 on p. 5570 to and including line 17 on p. 5573.

Subject: Gas-holder

The Columbus Gas & Fuel Company

Line 17 on p. 427 to and including line 18 on p. 428.
Line 14 on p. 515 to and including line 25 on p. 517.
Line 15 on p. 671 to and including line 22 on p. 675.
Line 13 on p. 689 to and including line 11 on p. 690.
Line 22 on p. 707 to and including line 23 on p. 708.
Line 29 on p. 1440 to and including line 24 on p. 1441.
Line 21 on p. 1474 to and including line 10 on p. 1478.
Line 14 on p. 3451 to and including line 17 on p. 3451.
Line 26 on p. 3451 to and including line 24 on p. 3452.
Line 22 on p. 3455 to and including line 25 on p. 3464.
Line 9 on p. 4123 to and including line 16 on p. 4127.

Subject: Going Concern Value

The Columbus Gas and Fuel Company

Line 24 on p. 439 to and including line 27 on p. 439.
Line 3 on p. 465 to and including bottom of p. 467.
Line 24 on p. 468 to and including bottom of p. 476.
Line 27 on p. 497 to and including line 10 on p. 498.
Top of p. 502 to and including line 9 on p. 502.
Line 22 on p. 502 to and including line 14 on p. 503.
Line 29 on p. 507 to and including line 1 on p. 508.
Line 5 on p. 523 to and including line 27 on p. 526.
Line 16 on p. 683 to and including line 1 on p. 684.
Line 12 on p. 1014 to and including line 12 on p. 1032.
Line 7 on p. 1035 to and including line 21 on p. 1049.
Line 10 on p. 1050 to and including line 20 on p. 1050.
Line 12 on p. 1078 to and including line 12 on p. 1095.
Line 25 on p. 1096 to and including line 20 on p. 1109.
Line 4 on p. 1113 to and including line 19 on p. 1115.
Line 19 on p. 1135 to the bottom of p. 1141.
Line 16 on p. 1142 to and including line 17 on p. 1146.
Line 19 on p. 1148 to and including line 26 on p. 1149.
Line 11 on p. 1151 to and including line 24 on p. 1156.
Line 16 on p. 1162 to and including line 10 on p. 1168.
Line 28 on p. 1177 to the bottom of p. 1196.
Line 6 on p. 1219 to and including line 19 on p. 1223.
Line 7 on p. 1224 to and including line 6 on p. 1243.
Top of p. 1244 to and including line 20 on p. 1259.
Line 29 on p. 1263 to the bottom of p. 1286.
Line 21 on p. 1292 to and including line 21 on p. 1319.
Line 13 on p. 1451 to and including line 18 on p. 1451.
Line 4 on p. 1935 to and including line 16 on p. 1936.
Line 19 on p. 3607 to and including line 11 on p. 3610.
Line 28 on p. 3611 to and including bottom of p. 3614.
Line 21 on p. 3617 to and including line 10 on p. 3618.
Line 26 on p. 3627 to and including line 6 on p. 3628.
Line 7 on p. 4144 to and including line 21 on p. 4146.
Line 18 on p. 4148 to and including line 16 on p. 4150.

[fol. 347] Subject: Cost of Financing

The Columbus Gas and Fuel Company

Line 21 on p. 440 to and including line 23 on p. 440.
Line 5 on p. 462 to and including line 7 on p. 464.

Line 3 on p. 1051 to and including line 3 on p. 1053.
Line 17 on p. 1055 to the bottom of p. 1066.
Top of p. 1068 to and including line 11 on p. 1078.
Line 20 on p. 1115 to and including line 23 on p. 1119.
Line 19 on p. 1202 to and including line 18 on p. 1203.
Line 21 on p. 1259 to and including line 26 on p. 1263.

Subject: General Overheads

The Columbus Gas and Fuel Company

Line 17 on p. 43 to and including line 15 on p. 44.
Line 9 on p. 46 to and including line 13 on p. 51.
Line 24 on p. 51 to and including line 13 on p. 54.
Line 6 on p. 55 to and including bottom of p. 57.
Line 27 on p. 428 to and including line 16 on p. 431.
Line 21 on p. 1429 to and including line 28 on p. 1432.
Line 15 on p. 3445 to and including line 9 on p. 3446.
Line 24 on p. 4088 to the bottom of p. 4094.

Subject: Working Capital, Materials and Supplies

The Columbus Gas and Fuel Company

Top of p. 484 to and including line 22 on p. 486.
Line 21 on p. 1364 to and including line 15 on p. 1365.
Line 12 on p. 1367 to and including line 2 on p. 1369.
Top of p. 3447 to and including line 23 on p. 3448.

Subject: Annual Allowance for Depreciation

The Columbus Gas and Fuel Company

Line 6 on p. 3571 to and including line 15 on p. 3571.
Line 23 on p. 3665 to and including line 4 on p. 3666.
Top of p. 3706 to and including line 10 on p. 3706.
Line 6 on p. 4049 to and including line 1 on p. 4051.
Line 27 on p. 4184 to and including line 7 on p. 4186.

Subject: Load Building Expense

The Columbus Gas and Fuel Company

Line 21 on p. 898 to and including line 3 on p. 901.
Line 7 on p. 902 to and including line 4 on p. 903.
Line 18 on p. 907 to the bottom of p. 907.
Line 6 on p. 908 to and including line 12 on p. 910.

Line 18 on p. 3639 to and including line 23 on p. 3639.
Line 16 on p. 5626 to and including line 13 on p. 5629.

[fol. 348] Subject: Gas Sales—Lost Gas

The Columbus Gas and Fuel Company

Line 14 on p. 153 to and including line 18 on p. 154.
Line 10 on p. 3631 to and including line 23 on p. 3631.
Line 24 on p. 3633 to and including line 26 on p. 3633.
Line 18 on p. 4268 to and including line 11 on p. 4269.
Line 13 on p. 4278 to the bottom of p. 4278.
Line 18 on p. 5181 to and including line 18 on p. 5184.
Line 19 on p. 5358 to and including line 13 on p. 5359.
Line 14 on p. 4074 to and including line 1 on p. 4077.
Line 23 on p. 4100 to and including line 27 on p. 4104.
Top of p. 4107 to and including line 1 on p. 4111.

Subject: Collar Leak Clamps

The Columbus Gas and Fuel Company

Line 26 on p. 4051 to and including line 12 on p. 4061.
Line 18 on p. 4065 to and including line 1 on p. 4069.

[fol. 349] 40. The following exhibits offered and introduced before The Public Utilities Commission of Ohio:

Company Exhibits Nos. 2 (p. 12 Revised), 10 (pp. 3, 23, 26, 27), 11, 12, 15, 16, 17, 19, 43, 44 (pp. 3, 9, 10, 11, 19, 20), 45 (pp. 29, 30), 58, 59, 60, 61, 62, 64, 69, 74, 78, 80, 81, 82, 83, 96, 97, 98, 116 (pp. 29, 30, 31), 140, 157 A-B-C-D, 159, 173, 177, 178, 178-A, 179, 180, 184, 186, 201, 205, 208, 210.

To be certified as original exhibits: 20 and 21, 57, 86, 139, 141, 142, 143, 144, 145, 146, 147, 148, 149, 153, 154, 155, 181, 182, 182-A, 183, 187, 189, 190, 191, 192, 196, 197, 198, 199, 206.

City Exhibits: Nos. 26, 27, 30, 46, 47, 50, 50-A, 60 (pp. 1 and 2), 66 (pp. 44-56), 69 (p. 1), 102, 108 (pp. 5, 9, 10, 11, 12, 22, 23, 24), 110, 111.

To be certified as original exhibits: 76.

Dated this 23rd day of October, 1933. Edward C. Turner, Albert M. Calland, Attorneys for The Columbus Gas and Fuel Company.

[fol. 350] Service of a copy of the foregoing precipe is hereby acknowledged this 23rd day of October, 1933.

John W. Bricker, Attorney General of Ohio; Donald C. Power, Special Counsel, Attorneys for The Public Utilities Commission of Ohio. John L. Davies, James W. Huffman, James M. Butler, Attorneys for The City of Columbus, Ohio.

[fol. 350a] [File endorsement omitted.]

[fol. 351] IN SUPREME COURT OF THE UNITED STATES

No. 23864

No. 23868

[Title omitted]

Consolidated by Order of the Court, Dated the 25th day of April, 1933

PRÆCIPE FOR TRANSCRIPT AND ACKNOWLEDGMENT OF SERVICE —Filed Nov. 25, 1933

To the Clerk of the Supreme Court of Ohio:

You are hereby requested to make a transcript of record to be filed in the Supreme Court of the United States, pursuant to an order of appeal allowed in the above entitled cause, and to include in such transcript of record the following papers and exhibits, to-wit:

1. Application for Rehearing, filed October 19, 1932, by the City of Columbus with The Public Utilities Commission of Ohio.

2. Protest of Valuations, filed October 31, 1932, by the City of Columbus with The Public Utilities Commission of Ohio.

[fol. 352] Subject: Qualification of Witnesses

L. E. Welker and Assistants:

Line 19, p. 129 to and including line 13, p. 130.

H. R. Allensworth:

Line 4, p. 3654 to and including line 8, p. 3654.
Line 4, p. 3953 to bottom of page 3957.
Line 18, p. 3960 to and including line 25, p. 3966.
Line 22, p. 3967 to line 17, p. 3985.
Line 26, p. 3996 to and including line 13, p. 3998.
Line 21, p. 4163 to and including line 21, p. 4172.
Line 13, p. 4184 to and including line 26, p. 4184.

Phillip Burgess:

Line 7, p. 3785 to and including line 7, p. 3786.
Line 26, p. 3786 to and including line 17, p. 3787.
Lines 26 and 27, p. 3792.
Lines 1, 2, 3 and 4, p. 3793.
Line 12, p. 3799 to and including line 25, p. 3799.
Line 5, p. 3820 to bottom of page 3824.
Line 15, p. 3835 to and including line 3, p. 3841.
Line 10, p. 3843 to bottom of page 3855.

Subject: Valuation and Operating Expense

The Columbus Gas and Fuel Company

Seyffert—Cross-examination:

All of page 244, p. 245 and to and including line 26, p. 246.
Line 9, p. 1405 to and including line 22, p. 1407.

Strickler—Cross-examination:

Top of page 1434 to and including line 28, p. 1440.
Line 7, p. 1448 to and including line 14, p. 1449.

Newman—Cross-examination:

Line 8, p. 2486 to and including line 16, p. 2493.
Line 13, p. 2497 to and including line 4, p. 2498.
Line 5, p. 2502 to and including line 11, p. 2502.
Line 7, p. 2507 to and including line 3, p. 2509.

[fol. 353] Allensworth—Direct Examination:

Line 13, p. 3406 to and including line 20, p. 3407.
Line 2, p. 3431 to and including line 13, p. 3432.
Line 7, p. 3438 to and including line 14, p. 3445.
Line 5, p. 3449 to and including line 10, p. 3450.
Line 19, p. 3466 to and including line 25, p. 3469.
Line 12, p. 3842 to and including last line at bottom of page.
Line 23, p. 3484 to and including line 22, p. 3485.
Line 23, p. 3485 to and including line 26, p. 3500.
Line 13, p. 3510 to and including line 5, p. 3515.
Line 9, p. 3516 to and including line 16, p. 3532.
Line 18, p. 3532 to and including line 3, p. 3533.
Line 6, p. 3533 to and including line 11, p. 3554.
Line 7, p. 3556 to and including line 4, p. 3571.
Line 6, p. 3580 to and including line 19, p. 3607.
Line 24, p. 3628 to and including line 16, p. 3629.
Line 5, p. 3636 to and including line 14, p. 3636.
Line 19, p. 3638 to and including line 17, p. 3639.
Line 20, p. 3644 to and including line 28, p. 3651.
Line 10, p. 3654 to and including line 22, p. 3665.
Line 27, p. 3669 to and including line 27, p. 3672.
Line 16, p. 3675 to and including line 27, p. 3676.
Line 21, p. 3677 to and including line 23, p. 3678.
Line 9, p. 3681 to and including line 26, p. 3686.
Line 14, p. 3872 to and including line 17, p. 3884.

Burgess—Direct Examination:

Line 24, p. 3735 to and including line 4, p. 3736.
Line 10, p. 3737 to and including line 4, p. 3744.
Top of page 3745 to bottom of page 3775.

Burgess—Cross-examination:

Line 8, p. 3781 to and including line 20, p. 3781.

Allensworth—Direct Examination:

Top of page 4190 to and including line 17, p. 4190.
Lines 8 and 9, p. 4193.
Line 19, p. 4282 to and including line 15, p. 4283.

Kellogg—Direct Examination.

Line 13, p. 5904 to and including line 10, p. 5905.

Subject: Valuation and Operating Expense

The Ohio Fuel Gas Company

Allensworth—Direct Examination:

Line 4, p. 4285 to and including line 5, p. 4294.
[fol. 354] Top of page 4295 to and including line 7, p. 4305.
Line 26, p. 4306 to and including line 10, p. 4317.
Line 2, p. 5922 to bottom of page 5926.

Blundon—Direct Examination:

Line 6, p. 4331 to and including line 6, p. 4344.
Line 19, p. 4381 to and including line 26, p. 4381.
Line 28, p. 4402 to and including line 13, p. 4403.
Line 27, p. 4429 to and including line 26, p. 4430.

Subject: Rate of Return

Wheeler—Cross-examination:

Line 21, p. 1207 to and including line 8, p. 1208.
Line 21, p. 1259 to and including line 5, p. 1260.

Allensworth—Direct Examination:

Line 21, p. 3721 to and including line 15, p. 3724.

Subject: Leaseholds

The Ohio Fuel Gas Company

Seyffert—Cross-examination:

Line 16, p. 1885 to and including line 15, p. 1889.
Line 13, p. 1890 to and including line 22, p. 1895.
Line 13, p. 1923 to and including line 17, 1923.
Line 7, p. 2066 to and including line 6, p. 2093.
Top of page 2100 to and including line 15, p. 2101.
Line 4, p. 2108 to and including line 18, p. 2110.
Line 2, p. 2122 to bottom of page 2123.
Line 5, p. 5928 to and including line 25, p. 5929.

Dally—Cross-examination:

Line 6, p. 3008 to and including line 11, p. 3020.
Line 26, p. 3049 to and including line 20, p. 3053.

Witmer—Cross-examination:

Line 21, p. 3112 to and including line 5, p. 3116.
Line 12, p. 3147 to and including line 13, p. 3148.

Meals—Cross-examination:

Line 7, p. 3201 to and including line 6, p. 3205.
Line 11, p. 3216 to and including line 21, p. 3217.

Webber—Cross-examination:

Line 23, p. 3256 to and including line 27, p. 3259.
Line 15, p. 3288 to and including line 5, p. 3289.

Webber—Redirect Examination:

Line 7, p. 3311 to and including line 7, p. 3314.

Blundon—Cross-examination:

Line 25, p. 4511 to and including line 2, p. 4512.

[fol. 355] Blundon—Direct Examination:

Top of page 4610 to and including line 19, p. 4613.
Line 28, p. 4613 to and including line 19, p. 4620.
Line 4, p. 4646 to and including line 20, p. 4646.
Line 26, p. 4664 to and including line 3, p. 4665.
Line 2, p. 4669 to and including line 15, p. 4669.
Line 6, p. 4818 to and including line 22, p. 4831.

Blundon—Cross-examination:

Line 15, p. 4786 to and including line 19, p. 4805.
Line 25, p. 5842 to and including line 20, p. 5847.

Pepperberg—Cross-examination:

Line 8, p. 5369 to and including line 9, p. 5376.
Line 18, p. 5491 to and including line 3, p. 5495.

Blundon—Direct Examination:

Line 10, p. 5790 to and including line 24, p. 5791.
Line 10, p. 5792 to and including line 11, p. 5793.

Subject: Amortization—Depletion

The Ohio Fuel Gas Company

Seyffert—Cross-examination:

Line 19, p. 274 to and including line 10, p. 276.

Hamilton—Direct Examination:

Line 22, p. 1120 to and including line 11, p. 1121.

Seyffert—Cross-examination.

Top of page 2589 to and including line 22, p. 2589.
Line 27, p. 2590 to and including line 8, p. 2591.

Blundon—Direct Examination:

Line 17, p. 4358 to and including line 25, p. 4358.

Weymouth—Cross-examination:

In line 19, p. 5292 "A" should be inserted after the second word.

Subject: Gas Well Depreciation

Antonelli—Cross-examination:

Line 2, p. 2004 to and including line 27, p. 2007.
Line 9, p. 2015 to and including line 15, p. 2025.
Top of page 2135 to and including line 13, p. 2137.
Line 4, p. 2304 to and including line 3, p. 2305.

Lerch—Cross-examination:

Line 17, p. 2322 to and including line 18, p. 2324.
[fol. 356] Line 22, p. 2330 to and including line 8, p. 2333.

Blundon—Direct Examination:

Line 18, p. 4354 to and including line 27, p. 4354.
Line 25, p. 4357 to and including line 2, p. 4360.

Weymouth—Cross-examination:

Line 13, p. 5292 to and including line 24, p. 5295.

Pepperberg—Cross-examination:

Line 4, p. 5495 to and including line 21, p. 5495.

Lerch—Cross-examination:

(From Company Exhibit No. 103).

Line 7, p. 1352 to and including line 16, p. 1353.

Subject: Going Concern Value

The Ohio Fuel Gas Company

Lerch—Cross-examination.

Line 16, p. 2306 to and including line 1, p. 2312.
Line 4, p. 2318 to and including line 16, p. 2322.
Line 25, p. 2339 to and including line 13, p. 2341.

Subject: General Overheads

The Ohio Fuel Gas Company

Blundon—Direct Examination:

Line 28, p. 4402 to and including line 13, p. 4403.
Line 10, p. 4630 to and including line 14, p. 4634.

Blundon—Cross-examination:

Line 2, p. 4649 to and including line 20, p. 4650.
Line 18, p. 4656 to and including line 11, p. 4658.
Line 25, p. 4659 to and including line 7, p. 4664.

Subject: Working Capital

The Ohio Fuel Gas Company

Antonelli—Cross-examination:

Line 23, p. 2013 to and including line 4, p. 2014.
Line 2, p. 2016 to and including line 8, p. 2016.
Line 29, p. 2138 to and including line 6, p. 2139.

Subject: Incomplete Construction Costs

The Ohio Fuel Gas Company

[fol. 357] Lerch—Cross-examination:

Line 19, p. 2334 to and including line 8, p. 2336.

Subject: Annual Allowance for Depreciation

The Ohio Fuel Gas Company

Seyffert—Cross-examination:

Line 16, p. 1001 to and including line 1, p. 1003.
Line 18, p. 5196 to and including line 7, p. 5197.

Subject: Allocation.

The Ohio Fuel Gas Company

Phillips—Direct examination:

Line 3, p. 212 to bottom of page 216.

Phillips—Cross-examination:

Line 5, p. 703 to and including line 27, p. 703.
Line 19, p. 706 to and including line 21, p. 707.
Line 15, p. 835 to and including line 25, p. 835.
Line 21, p. 836 to and including line 24, p. 838.

Strickler—Redirect examination:

Line 26, p. 1462 to and including line 2, p. 1464.

Phillips—Direct examination:

Line 2, p. 1494 to bottom of page 1495.

Hightower—Cross-examination:

Line 1, p. 1703 to and including line 15, p. 1704.

Phillips—Cross-examination:

Line 27, p. 1770 to and including line 4, p. 1771.
Line 18, p. 1771 to and including line 9, p. 1772.
Line 29, p. 1788 to and including line 24, p. 1789.
Line 5, p. 2761 to and including line 21, p. 2766.

Blundon—Direct examination:

Line 22, p. 4361 to and including line 9, p. 4362.
Line 19, p. 4364 to and including line 3, p. 4365.
Line 20, p. 4366 to and including line 14, p. 4369.
Line 11, p. 4374 to and including line 22, p. 4376.
Line 21, p. 4377 to and including line 24, p. 4380.

Blundon—Cross-examination:

Line 17, p. 4436 to and including line 1, p. 4437.
Line 14, p. 4442 to and including line 20, p. 4442.
Top of page 4449 to and including line 5, p. 4451.
[fol. 358] Line 26, p. 4452 to and including line 4, p. 4454.
Line 15, p. 4454 to and including line 14, p. 4455.

Line 17, p. 4456 to and including line 15, p. 4457.
Line 25(p. 4458 to and including line 14, p. 4463.
Line 20, p. 4465 to and including line 11, p. 4466.
Line 10, p. 4472 to and including line 21, p. 4472.
Line 16, p. 4473 to and including line 22, p. 4479.
Line 24, p. 4480 to and including line 28, p. 4485.
Line 20, p. 4486 to and including line 15, p. 4487.
Line 22, p. 4488 to and including line 4, p. 4492.

Blundon—Direct examination:

Line 26, p. 4643 to and including line 18, p. 4644.

Blundon—Cross-examination:

Top of page 4701 to and including line 1, p. 4715.
Line 24, p. 4727 to and including line 23, p. 4736.
Line 15, p. 4739 to and including line 20, p. 4741.
Line 24, p. 4742 to and including line 8, p. 4753.
Line 16, p. 4753 to and including line 9, p. 4759.
Line 6, p. 4771 to and including line 8, p. 4785.

Carter—Direct examination:

Top of page 4914 to and including line 5, p. 4916.
Line 24, p. 4919 to and including line 27, p. 4920.
Line 15, p. 4923 to and including line 5, p. 4924.
Line 28, p. 4924 to and including line 14, p. 4925.
Line 15, p. 4935 to and including line 9, p. 4936.
Line 13, p. 4947 to and including line 23, p. 4958.
Line 14, p. 4967 to and including line 25, p. 4975.
Line 15, p. 4980 to and including line 23, p. 4984.
Line 10, p. 4995 to and including line 12, p. 5000.
Line 27, p. 5008 to and including line 9, p. 5042.

Winans—Cross-examination:

Line 8, p. 5653 to and including line 23, p. 5655.

Blundon—Direct examination:

Line 26, p. 5778 to and including line 25, p. 5786.
Line 17, p. 5789 to and including line 9, p. 5790.
Line 17, p. 5810 to and including line 26, p. 5811.

Blundon—Cross-examination:

Line 21, p. 5862 to and including line 7, p. 5864.
Top of page 5870 to and including line 9, p. 5870.
Line 2, p. 5872 to and including line 25, p. 5874.

Commissioner Geiger:

Top of page 5888 to and including line 7, p. 5894.

Blundon—Cross-examination:

Line 10, p. 4716 to and including line 16, p. 4726.
Line 4, p. 5895 to and including line 1, p. 5902.

Blundon—Redirect examination:

Line 12, p. 5797 to and including line 27, p. 5800.
Line 13, p. 5802 to and including line 5, p. 5804.
[fol. 359] Line 21, p. 5805 to and including line 6, p. 5806.
Line 17, p. 5806 to and including line 15, p. 5810.

Subject: Valuation and Operating Expenses

The United Fuel Gas Company

Line 19, p. 1008 to and including line 19, p. 1011.
Line 24, p. 1624 to and including line 7, p. 1626.
Line 21, p. 1626 to and including line 13, p. 1629.

Hightower—Direct examination:

Line 21, p. 1641 to and including line 14, p. 1644.

Hightower—Cross-examination:

Line 7, p. 1653 to and including line 12, p. 1659.
Line 7, p. 1664 to and including line 12, p. 1669.
Line 15, p. 1688 to and including all of page 1695.
Line 24, p. 1698 to and including line 3, p. 1706.
Line 13, p. 1707 to and including line 27, p. 1734.
Top of page 1738 to and including line 11, p. 1745.

Hightower—Recross-examination:

Line 15, p. 1748 to bottom of page 1748.
Line 12, p. 1750 to and including line 6, p. 1753.
Line 10, p. 1764 to and including line 26, p. 1765.
Line 23, p. 2238 to and including line 19, p. 2239.

Blundon—Direct examination:

Line 12, p. 4373 to and including line 10, p. 4374.
Line 15, p. 4643 to and including line 25, p. 4643.

Subject: Gas Leaseholds

The United Fuel Gas Company

Blundon—Cross-examination:

Line 24, p. 4508 to and including line 3, p. 4510.
Top of page 4511 to and including line 9, p. 4511.
Line 27, p. 4513 to and including line 27, p. 4514.

Larner—Direct examination:

(From Company Exhibit No. 102.)
Line 14, p. 799 to bottom of page 800.

Larner—Cross-examination:

(From Company Exhibit No. 102.)
Top of page 801 to bottom of page 806.
[fol. 360] (From Company Exhibit No. 103.)
Line 6, p. 1719 to and including line 4, p. 1740.
Line 4, p. 1765 to bottom of page 1765.

Dally—Cross-examination:

(From Company Exhibit No. 102.)
Line 8, p. 842 to and including line 8, p. 867.

Dally—Recross-examination:

(From Company Exhibit No. 102.)
Line 17, p. 868 to and including line 8, p. 871.
(From Company Exhibit No. 103.)
Line 4, p. 1836 to bottom of page 1853.

Blair—Cross-examination:

(From Company Exhibit No. 102.)
Top of page 910 to and including line 5, p. 945.

Burdette—Cross-examination:

(From Company Exhibit No. 102.)
Line 15, p. 971 to and including line 14, p. 1000.

Hurlburt—Cross-examination:

(From Company Exhibit No. 102.)
Top of page 1117 to and including line 15, p. 1156.

(From Company Exhibit No. 103.)
Line 12, p. 1884 to and including line 3, p. 1885.

Krebs—Cross-examination:

(From Company Exhibit No. 102.)
Line 9, p. 1188 to bottom of page 1192.
(From Company Exhibit No. 103.)
Line 5, p. 1523 to and including line 4, p. 1539.

[fol. 361] Subject: Labor Performance

The Columbus Gas and Fuel Company

Allensworth—Direct examination:

Line 27, p. 3500 to and including line 20, p. 3508.
Line 6, p. 3509 to and including line 11, p. 3510.
Line 23, p. 5918 to and including line 1, p. 5921.

Ferguson—Direct examination:

Line 18, p. 5573 to and including line 9, p. 5575.

Ferguson—Cross-examination:

Line 9, p. 5704 to and including line 6, p. 5714.
Line 28, p. 5725 to and including line 10, p. 5727.
Line 24, p. 5737 to and including line 1, p. 5738.
Line 28, p. 5738 to and including line 28, p. 5740.
Top of page 5743 to and including line 16, p. 5743.

Kellogg—Direct examination:

Line 27, p. 5906 to and including line 18, p. 5907.
Line 2, p. 5909 to and including line 18, p. 5909.

Subject: Gas Holder

The Columbus Gas and Fuel Company

Demorest—Cross-examination:

Line 6, p. 578 to and including line 17, p. 580.
Line 14, p. 584 to and including line 23, p. 584.

Strickler—Cross-examination:

Top of page 689 to and including line 12, p. 689.

Phillips—Cross-examination:

Line 24, p. 708 to and including line 3, p. 709.
Line 6, p. 1323 to and including line 22, p. 1323.

Strickler—Cross-examination:

Line 13, p. 1445 to and including line 15, p. 1447.

Strickler—Redirect examination:

Line 11, p. 1459 to and including line 10, p. 1460.

Allensworth—Direct examination:

Line 25, p. 3452 to and including line 15, p. 3454.

[fol. 362] Subject: Going Concern Value

The Columbus Gas and Fuel Company

Welker—Cross-examination:

Line 1, p. 477 to and including line 27, p. 479.

Welker—Recross-examination:

Line 10, p. 502 to and including line 21, p. 502.
Line 15, p. 503 to and including line 22, p. 503.

Dewing—Direct examination:

Line 8, p. 1050 to and including line 4, p. 1053.

Dewing—Cross-examination:

Line 5, p. 1077 to and including line 11, p. 1078.
Line 13, p. 1095 to and including line 24, p. 1096.

Hamilton—Direct examination:

Line 28, p. 1122 to and including line 10, p. 1123.

Hamilton—Cross-examination:

Line 5, p. 1147 to and including line 18, p. 1148.

Allensworth—Direct examination:

Line 12, p. 3610 to and including line 28, p. 3611.
Top of page 3615 to and including line 20, p. 3617.

Subject: Cost of Financing

The Columbus Gas and Fuel Company

Wheeler—Cross-examination:

Line 21, p. 1212 to and including line 19, p. 1216.

Allensworth—Direct examination:

Line 5, p. 3621 to and including line 18, p. 3627.

Subject: General Overheads

The Columbus Gas and Fuel Company

Welker—Direct examination:

Line 14, p. 54 to and including line 5, p. 55.

Welker—Cross-examination:

Line 17, p. 431 to and including line 8, p. 432.
Line 8, p. 435 to and including line 20, p. 440.
Line 7, p. 1326 to and including line 13, p. 1326.

Allensworth—Direct examination:

Line 12, p. 3419 to and including line 16, p. 3420.
Line 10, p. 3446 to and including line 15, p. 3446.

[fol. 363] Subject: Working Capital, Materials and Supplies

The Columbus Gas and Fuel Company

Welker—Cross-examination:

Line 23, p. 486 to and including line 26, p. 486.
Line 27, p. 1363 to and including line 20, p. 1364.
Line 16, p. 1365 to and including line 11, p. 1367.
Line 3, p. 1369 to and including line 15, p. 1373.

Allensworth—Direct examination:

Line 16, p. 3446 to and including line 1, p. 3447.
Line 5, p. 3449 to and including line 20, p. 3449.

Subject: Annual Allowance for Depreciation

The Columbus Gas and Fuel Company

Allensworth—Direct examination:

Line 18, p. 3704 to and including line 5, p. 3705.

Subject: Load Building Expense or Cost of Merchandising

The Columbus Gas and Fuel Company

Seyffert—Cross-examination:

Line 29, p. 897 to and including line 20, p. 898.
Line 28, p. 904 to and including line 17, p. 907.

Allensworth—Direct examination:

Line 24, p. 3639 to and including line 19, p. 3644.

Subject: Gas Sales—Lost Gas.

The Columbus Gas and Fuel Company

Allensworth—Direct examination:

Line 24, p. 3631 to and including line 23, p. 3633.
Line 12, p. 4269 to and including line 12, p. 4278.

Allensworth—Cross examination:

Line 28, p. 4104 to bottom of page 4106.
Line 2, p. 4111 to and including line 1, p. 4113.

Subject: Collar Leak Clamps

The Columbus Gas and Fuel Company

Allensworth—Direct examination.

Line 26, p. 3422 to and including line 11, p. 3426.

Allensworth—Cross-examination:

Line 26, p. 3634 to and including line 3, p. 3635.
Line 18, p. 3884 to and including line 10, p. 3885.
Line 2, p. 4069 to and including line 14, p. 4071.

[fol. 364] The following Exhibits offered and introduced before The Public Utilities Commission of Ohio:

Company Exhibits Nos. 23, 23-A, 23-B, 23-C, 76, 77, 79, 95, 130 (pp. 15, 16, 17).

To be certified as Original Exhibits: 63, 113, 115.

Joint Exhibit (See Record, p. 5929): Actual Cost of Certain Abandoned Leaseholds As Charged Out.

City Exhibits: 2, 6, 11, 18, 18-A, 21, p. 3; 23, 24, 25, 28, 33, 36, 37, 39, 51, 52, 56, pp. 1 & 2; 57, 58, 59, 60, 65, 67, 68, 69, 70, 75, 86, pp. 2 to 5, inc.; 87, 88, pp. 1 to 7, inc., pp. 12 to 14, inc.; 113, 115, pp. 1 to 25, inc.; 116.

To be certified as Original Exhibits: 15, 16, 19, 21, 22, 31, 35, 40, 43, 44, 48, 55, 62, 63, 64, 74, 89, 90 to 90-29.

Dated this — day of November, 1933.

The City of Columbus, by John L. Davies, City Attorney. James W. Huffman, Special Counsel.

[fol. 365] Service of a copy of the foregoing precipe is hereby acknowledged this 25th day of November, 1933.

Edward C. Turner, Albert M. Calland, Attorneys for The Columbus Gas and Fuel Company. John W. Binker, Attorney General of Ohio. Donald C. Power, Attorney for The Public Utilities Commission of Ohio.

[fol. 365a] [File endorsement omitted.]

[fol. 366] Clerk's Certificate to foregoing transcript omitted in printing.

[fol. 366a] Before Public Utilities Commission of Ohio

Statement of Evidence

Qualification of Witnesses

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[fol. 367] Lloyd E. Welker called on behalf of the Complainant, being first duly sworn, testified as follows:

Examined by Mr. Turner:

Q. You have been sworn, have you, Mr. Welker?
A. Yes, sir.

Q. State your name and residence?

A. Lloyd E. Welker, Columbus, Ohio.

Q. What is your occupation?

A. I am a gas engineer, the chief engineer in charge of the gas Engineering Department of the Columbia Engineering & Management Company.

Q. I wish you would state your experience and qualifications as an engineer.

A. I am a graduate Civil Engineer with twenty-two years of practical experience in the construction and operation of natural gas, manufactured gas and petroleum plants in the production, transmission and distribution division of activity; briefly stated as follows:

In the year 1904 to 1905, with the Ohio and South Penn Oil Company.

In the years 1905 to 1909, in attendance at the Clarkson College of Technology, University of State of New York, and graduated as a Civil Engineer.

The year 1909 to 1910, with the National Transit Company—Transportation Oil Pipe Line Company and associated pipe line companies.

In 1910 to 1911, engaged with The United Fuel Gas Company of Charleston, West Virginia, in the Engineering De-

[fol. 368] partment.

The years 1911 to 1927, with The Ohio Fuel Supply Company, later The Ohio Fuel Gas Company, and also working for The Natural Gas & Fuel Company and The Columbus Gas & Fuel Company and associated companies.

During the years 1927 to 1930, Chief Engineer of the Gas Engineering Department of The Columbia Engineering & Management Corporation.

During the years 1928 and 1929 I was, for periods, acting manager of the gas transmission department, constructing, maintaining and operating the approximately 3,000 miles of transmission and other pipe lines and compressor stations of The Ohio Fuel Gas Company; I do not mean they were all constructed in that time; its pipe lines within the comprehension of these activities.

I have been engaged in a great number of inventories and appraisals, briefly as follows:

1910, I acted as an assistant engineer in the inventory of The United Fuel Gas Company.

1911 to 1914, as Chief Engineer of The Ohio Fuel Supply Company inventory, including The Natural Gas & Fuel Company.

1921, in charge of the inventory of The Pennsylvania Fuel Supply Company.

1927, The Columbia Gas Supply Company.

1929, The Dayton Power & Light Company.

I have also been engaged in inventories or appraisals for presentations before rate regulatory bodies, as follows:

1922 to 1924, The Pennsylvania Fuel Supply Company.

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[fol. 369] 1925, The Columbus Gas & Fuel Company and The Federal Gas & Fuel Company.

1926, The Point Pleasant Natural Gas Company and Central Ohio Gas Company.

In 1929, the Fayette County Gas Company and the United Fuel Gas Company.

These inventories and appraisals have covered several hundred millions of dollars worth of natural and manufactured gas properties.

I have had experience, in some limited detail, in addition to inventory and appraisal work, which has consisted of construction engineering, planning in the office and drafting room, as well as laying out in the field hundreds of miles of gas pipe lines, locations of thousands of gas wells, a large number of compressor stations and other equipment or appurtenances incidental to gas plant construction.

I have also been responsible for project estimating on new construction work, requiring millions of dollars, as well as the study of cost analyses and material prices for both estimating and checking actual cost record data for budget reporting.

I have been for the last approximate three year period actively engaged as engineer in charge of the Columbia Engineering and Management Corporation, Gas Engineering Department, active in the preparation and presentation of inventory and appraisal reports for banking reports, purchase and sale reports and regulatory commission approval, rate controversy presentation, fixed capital

and insurance appraisal and record requirements, engi-

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[fol. 370] neering consultation and supervision for the layout of the major gas plant construction and operation projects in gas plant and electrolysis inspection on the entire Columbia System gas properties routine and research, chemical investigations, gas measurement, distribution, production and transmission standardization and operation investigation, as well as any other necessary gas engineering service required or requested by the operating companies of the Columbia System.

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Q. Mr. Welker, did you have assistants working under your supervision in the preparation of the inventory and appraisal of this property?

A. I did.

Q. Please give their names and qualifications and indicate in as much detail as you can the work done by each of them.

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[fol. 371] Commissioner Bricker: Did they do that as you directed?

The Witness: Yes, sir, that is correct.

Commissioner Bricker: Did you make out the plans and specifications for their detailed work?

The Witness: Not exactly as you state in its entirety. In other words, the classification of property that I know is in the Columbus Gas & Fuel Company property, in accordance with the Uniform Classification of Accounts, which has to do with the classification of property or physical units, there are specialized engineers on my staff that are exceptionally familiar with that; one engineer with meters, for instance, and another engineer with buildings, and then I direct those men to proceed to first get the inventory or the material listing and then develop the unit costs applicable, first as to the material and present-day prices available to the company, and then the labor costs that are in accord with the labor wages paid by the company.

Commissioner Bricker: Were there any matters on which they had to use their own individual and independent judgment?

The Witness: There were matters in which their specialized ability was recognized to a great extent, or their individual judgment.

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[fol. 372] A. The method of valuation report procedure was as follows:

1. An inventory or summary by sizes, types and classification of pipe in pipe lines or mains was compiled by a crew of engineering assistants working under the direction of Mr. Shidecker in obtaining the amounts of used and useful pipe line equipment.

2. The regulator and measuring stations were inventoried and observed for depreciation by Messrs. Alstadt, Overbeck and Greene, who, upon completing inventory, priced the complete installation from their actual experience basis.

3. All structures were measured in the field to obtain quantities of materials and type of construction by Messrs. Greene and Konecny. The prevailing labor and material prices were obtained by Mr. Rader and his assistants and priced in detail to arrive at the correct present reproduction cost of building structures.

4. Meters were inventoried by using the company's records of class, type and number, and priced from the actual prices charged to or paid by the company's purchasing department, installation cost being developed by Mr. Knox in accordance with company's practice in this work.

5. Service Installations: More than 5,000 spot check field investigations were made as to services for lengths as well as using the company's actual records of material and appurtenant data, compiled and priced by Mr. Knox in accordance with the company's practice in installation of service lines from mains to curb box.

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[fol. 373] The compilation of the above unit prices, as to installation and methods was studied and modified by Mr. J. P. Strickler, Superintendent of The Columbus Gas & Fuel Company property, who has actively been engaged in the installation of this plant for a period of approximately forty or more years.

Qualifications of Mr. Keener, before mentioned

E. R. Keener is a Civil Engineer with three and one-half years of university education in Civil Engineering and ten years of experience in the engineering departments of oil and gas companies.

A summary of Mr. Keener's education and experience is as follows:

The year 1915 to 1918, three and one-half years of university education in Ohio Wesleyan and Ohio State Universities.

1918 and 1919, Commissioned Officer in the United States Army.

1919 and 1920, surveying and drafting with The Logan Gas Company.

1920 and 1921, Chief Draftsman with The Union Oil Company of New York City.

Chairman Geiger: That is what we have been quarreling about all morning and afternoon.

The Witness: 1922 and 1923, Engineer with The Ohio Fuel Supply Company, Columbus, Ohio.

1923 and 1927, Engineer with The Pure Oil Company, Columbus, Ohio.

1928 and 1929, valuation engineer with The Columbia

[fol. 374] Engineering & Management Corporation, Columbus, Ohio.

During 1928 and 1929 Mr. Keener has been specializing and actually engaged in the valuation of gas property in Ohio, Pennsylvania, West Virginia and Kentucky, representing over one hundred millions of dollars of property.

He has been in direct charge of many inventories and valuations, supervising groups of engineers, inventory men and clerks in the preparation of priced inventories.

Some of the valuations in which Mr. Keener has been actively engaged are as follows:

The Fayette County Gas Company, Pennsylvania, entire property appraised.

United Fuel Gas Company, West Virginia, entire property appraised.

The Ohio Fuel Gas Company, Ohio, production, transmission and general property.

The Ohio Fuel Gas Company, Toledo, Toledo distribution plant.

The Northwestern Ohio Natural Gas Company, Toledo, Toledo Distribution Plant.

The Dayton Power & Light Company, Dayton, Dayton distribution plant.

Qualifications of T. E. Mullin

T. E. Mullin is a graduate engineer from The Ohio State University. He has had some fifteen years of practical experience in engineering, the majority of his time being devoted to electrolysis survey studies, soil corrosion studies, etc., all bearing in particular upon the deterioration of pipe in the ground.

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[fol. 375] A brief summary of his experience is as follows:

The year 1915, graduated in Electrical Engineering, in Mechanical Engineering, The Ohio State University.

1915 to 1917, The Ohio State Telephone Company, Electrolysis Engineer specializing in electrolysis surveys in Columbus and other Ohio Cities.

1917 to 1918, The Ohio Bell Telephone Company, Outside Plant Engineer.

1918 and 1919, United States Army Air Service.

1919 to 1922, The Ohio Bell Telephone Company, Outside Plant Engineer.

1922 to 1925, The Columbus Gas & Fuel Company, Electrolysis Engineer in charge of the installation of protective measures on the natural gas systems.

1925 to 1928, The Ohio Fuel Gas Company and Logan Gas Company, Electrolysis and Appraisal Engineer.

1928 to 1930, The Columbia Engineering & Management Corporation, Gas Engineering, specializing on depreciation studies of mains of natural gas distribution systems in Ohio, Pennsylvania, West Virginia and Kentucky.

Qualifications of D. O. Ferguson

D. O. Ferguson is a graduate Engineer of The Ohio State University, Class of 1923. He has had seven years of practical experience in construction work, including three and one-half years on gas plant construction and gas main installation. He has been an engineer and also a contractor's superintendent.

A brief summary of his experience is as follows:

The year 1922, Inspector for Ohio State Highway De- 116

[fol. 376] partment in paving brick plant.

1923 and 1924, Highway Engineer and Inspector for State Road Commission of West Virginia on twelve miles of road construction consisting of concrete drainage structures and heavy grading.

1925, Engineer on Corps, B. & O. Railroad Company.

1925 and 1926, Engineer for General Electric Company, Inspection and Design.

1926 to 1928, Construction Superintendent for Western Gas Construction Company; direct charge of field labor, including piping, excavation, concrete and structural steel. Pipe Line Superintendent in direct charge of installing gas mains. Assistant Construction Superintendent on manufactured gas plants, including holder and purifier construction, tanks, foundations, excavations, piping, regulator buildings, etc.

1928 to 1930, Engineer for Columbia Engineering and Management Corporation.

Mr. D. O. Ferguson has been inspector and field engineer on the construction of a 5,000,000 and 6,000,000 cubic foot waterless gas holder, inspector and engineer on $75,000.00 of electric welded purifier boxes; inspector and engineer on concrete piling, heavy concrete foundations and compressor station buildings. He has been construction superintendent on a 1,000-horsepower compressor station installation and has had direct charge of excavation, laying underground piping, making welded fittings, headers, installing regulators, etc. While employed by the Western Gas Construction Company as a construction superintendent, he was in charge of laying gas mains in Canastota and Oneida, New York, Tinley Park and Mokena, Illinois; 117

[fol. 377] Rochester and Webster, New York, and Painesville, Ohio. He organized the installation crew in the field and operated this crew as a separate unit away from the home office. He kept detail records of unit costs and sent daily progress reports to the home office. Certain foremen and straw bosses employed by him carried his orders to the workmen, but he was on the job along the trench constantly.

Mr. Ferguson has had experience in removing and replacing macadam, asphalt, brick and concrete pavements. He has removed and replaced sidewalks, tunneled tree roots, crossed city streets, car tracks, railroads, creeks, rivers and bridges. He has laid pipe across lawns, drives, along roads, under sidewalks and between curbs and sidewalks. He has de-watered trenches, shored up excavations, laid pipe through caving soil, swamps and solid rock. He has pushed pipe under car tracks, highways and railroads.

He has laid pipe in congested areas. He has had charge of installing gas mains varying in size from two-inch to twenty-inch and is familiar with all the costs of these installations.

Mr. Ferguson was an assistant construction superintendent for the Western Gas Construction Company on a manufactured gas plant in Biloxi, Mississippi, and was in direct charge of all field labor of excavating for tanks, gas holders and buildings; and he was also assistant construction superintendent for this company in Fort Wayne, Indiana, and was in charge of excavating, backfilling and piping as well as other items in connection with general building construction. He was an assistant construction superintend-
[fol. 378] ent in Sterling, Illinois, and was in direct charge
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of the labor engaged in installing underground gas, water, oil, tar and ammonia lines, as well as the labor required to excavate for buildings, tanks and machinery foundations.

He has been a construction superintendent for The Ohio Fuel Gas Company in Toledo, Ohio, and was in direct charge of building a compressor station, installing underground piping, excavating for tanks, buildings and machinery foundations.

Mr. Ferguson has been an engineer inspector on the installation of gas mains and distribution systems by The Columbus Gas & Fuel Company at a recent date. He is familiar with their construction organization and their methods of installing gas mains.

He is familiar with the soil conditions in Columbus and has observed a great number of excavations in this city.
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[fol. 379] Qualifications of R. S. Knox

R. S. Knox is a graduate of the Kansas State College in Electrical Engineering. He has had nine years of experience in the gas engineering field. Four years of this time was spent as Superintendent of Gas Distribution Plants.

A summary of his experience is as follows:

The year 1921, graduated from Kansas State College in Electrical Engineering.

1921 and 1922, Cadet Engineer for the Consolidated Gas Company of New Jersey.

1922 to 1924, Assistant Superintendent of Gas and Electric Distribution for Consolidated Gas Company of New Jersey.

1924 to 1928, Superintendent of Gas Distribution for the Jersey Central Power & Light Company.

1928 to 1930, Columbia Engineering & Management Corporation, reorganization of personal design of distribution personnel, leakage surveys, and inventories and appraisals of Gas Distribution Systems.

Mr. Knox is an experienced gas distribution engineer, who is qualified to design, construct and operate both high

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[fol. 380] and low pressure distribution systems. He has installed mains, services and meters; and he also has a knowledge of the material and labor required to install all parts of a distribution system. He has engaged in the inventory of distribution plants for the United Fuel Gas Company of Charleston, West Virginia, and The Dayton Power & Light Company of Dayton, Ohio.

Qualifications of O. W. Rader

O. W. Rader is a graduate Architectural Engineer with two and one-half years of practical experience in construction, designing, drafting and estimating of structures.

Brief detailed experience is as follows:

The years 1923 to 1927, Ohio State University, Architectural Engineering College.

1927 and 1928, Construction of buildings.

1928 and 1929, Employed by Bassett & Tresselt, Architects and Engineers: C. & C. Realty & Construction Com-

pany; and the Structural and Appraisal Departments of The Columbia Engineering & Management Corporation.

1928 and 1930, Appraisal Department of The Columbia Engineering & Management Corporation.

O. W. Rader has engaged in the following inventories and appraisals:

1929, Northwestern Ohio Natural Gas Company, The Dayton Power & Light Company, The Ohio Fuel Gas Company, and Insurance Appraisal of The United Fuel Gas Company.

Mr. Rader has also engaged in an inventory and appraisal, for presentation before a rate regulatory body, of the United Fuel Gas Company in 1929.

[fol. 381] Qualifications of C. D. Alstadt 121

C. D. Alstadt is an experienced gas engineer specializing in gas meters and regulators. He has had fifteen years of experience in the engineering fields.

A brief summary of his experience is as follows:

The years 1914 to 1917, Ohio State University and Iowa State College in the College of Engineering.

1917, The Ohio Fuel Supply Company, Meter Inspector.

1918, United States Army Air Service, Master Signal Electrician and Aviation Mechanic.

1919 to 1921, The Jeffrey Manufacturing Company, Production Department on Mine Fans.

1921 to 1923, The Ohio Fuel Gas Company, Meters and Regulators in the shop.

1923 to 1927, The Ohio Fuel Oil Company, Superintendent of Meter Department, which handled regulators and assisted in gas and oil production.

1927 to 1930, Columbia Engineering & Management Corporation, Gas Measurement and Regulator Engineer.

While specializing on meters and regulators, Mr. Alstadt has worked on various other engineering problems, such as operating the manufactured gas plant at Warren, Ohio, redesigning and constructing liquid sulphur purification plant at Forest, Ohio.

Mr. Alstadt is experienced and is very familiar with the design, construction and operation of all kinds and types of regulator and measuring station equipment. He worked

in the meter department shop for The Ohio Fuel Gas Company where it was necessary for him to build, rebuild and
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[fol. 382] repair all kinds and types of meters and regulators and to design settings for the installation of said equipment.

Mr. Alstadt was transferred from the meter shop of The Ohio Fuel Gas Company to The Ohio Fuel Oil Company, where he was superintendent of the meter department in charge of meters and regulators. As superintendent of the meter department, it was necessary for him to design meter and regulator stations and be in charge of the installation and operation of these stations.

While in Charleston, Mr. Alstadt was employed by a local engineering firm, which was making an inventory and appraisal for two West Virginia gas companies, to make a survey of the gas wells and to take open flows and rock pressures or same. He was also called upon to set up the installation costs for regulator and meter settings.

After spending four years with The Ohio Fuel Oil Company he was transferred to The Columbia Engineering & Management Corporation at Columbus, Ohio. Since returning to Columbus, some of his work has been along general gas engineering lines, but he has specialized in meters and regulators. The research work on orifice meters was done under the direction of U. S. Bureau of Standards and the American Gas Association, Natural Gas Division. The research work on positive meters and regulators was done under the direction of The Columbia Engineering & Management Corporation and it was in charge of Mr. Alstadt and Mr. Overbeck.

Some of the other engineering problems that Mr. Alstadt has been in charge of are the operation of a manufactured gas plant, the re-design and changes of a liquid sulphur
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[fol. 383] purification plant, and assisting in the design of gas mixing stations.

Qualifications of J. E. Overbeck

J. E. Overbeck is a practical gas measurement and pressure regulation engineer with thirteen years of practical experience in the gas business. During these thirteen years the greater part of his experience has been on gas meas-

urement and pressure regulation work. His experience has been on all types and makes of meters and regulators, together with all of the apparatus used in connection with gas measurement and pressure regulation.

A brief summary of his experience is as follows:

The years 1916 and 1917. Large capacity meter and regulator station operator with the Berea Pipe Line Company.

1917 to 1919. Lage capacity meter and regulator inspector for The Ohio Fuel Supply Company.

1919 to 1921, Meter and regulator shop foreman in charge of the shop; repairing and testing of all kinds of large capacity meter and regulator equipment for The Ohio Fuel Gas Company.

1921 to 1925, Chief Inspector of large capacity meters and regulators for the entire system of The Ohio Fuel Supply Company, The Ohio Fuel Gas Company, The Federal Gas & Fuel Company and The Columbus Gas & Fuel Company.

1925 to 1927, In charge of all meter and regulator repair shops for all types and sizes of gas meters for The Ohio Fuel Gas Company, The Logan Gas Company, The Springfield Gas Company, The Federal Gas & Fuel Company, The Columbus Gas & Fuel Company and The Northwestern Ohio Natural Gas Company.

[fol. 384] 1927 to 1930, Gas Measurement and pressure regulation engineer for The Columbia Engineering & Management Corporation, Gas Engineering Department. During this period he has been and is now occupied as a consulting engineer on meters and regulators for the Columbia System. 124

Mr. Overbeck has been a member of the Meter Committee of The American Gas Association for the last three years. This committee comprises only men of qualified experience selected from the various gas companies throughout the country. He has also made several statistical studies on the best meter design and operating maintenance practices, as well as to determine the effect of various gases on gas meters.

In the twelve years that he has been employed by gas companies, Mr. Overbeck's experience on regulators and measuring equipment has been varied and covers shop work, design, installation and operation.

Qualifications of J. W. Folger

J. W. Folger is a practical engineer with two years of college education and eleven years of practical engineering experience which has consisted largely of the design and construction of equipment and plants peculiar to the oil refining and natural gas industries.

The tabulation of his experience is as follows:

The years 1916 to 1918, attended Wittenberg College.

1918 and 1919, United States Army, Chemical Warfare Service.

1919 to 1922, Engineering Department of The Robbins & Meyers Company, Springfield, Ohio.

1922 to 1924, Engineering Department of the Ohio Fuel

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[fol. 385] Supply Company.

1924 to 1927, Refinery Engineering Department of The Pure Oil Company.

1927 to 1930, Gas Engineering Department of The Columbia Engineering & Management Corporation.

J. W. Folger has been engaged in the design of at least twelve gas compressor stations, six natural gasoline plants and three oil refineries, and he has also assisted in the construction of two gas compressor stations, two natural gasoline plants and one oil refinery. He has helped to lay out one gas distribution system, both in the office and on the ground. In 1922 Mr. Folger assisted in the inventory and appraisal of the property of The Pennsylvania Fuel Supply Company.

Qualifications of J. S. Stevenson

J. S. Stevenson received his engineering training at The Ohio State University, specializing in Civil Engineering, for three and one half years. He has had fourteen years of experience in various phases of engineering activities.

A summary of Mr. Stevenson's experience is as follows:

The years 1912 to 1916, Ohio State University.

1916 to 1919, Active duty as First Lieutenant and Captain of Infantry in command of line company, Mexican Border, Mobilization camp and A. E. F.

1919 and 1920, The Ohio Fuel Supply Company, Engineering Department.

1920 to 1922, Kanawha & Michigan Railway.

1922 to 1925, D. W. McGrath & Sons, General Contractors.

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[fol. 386] 1925 to 1930, Gas Engineering Department, Columbia Engineering & Management Corporation.

J. S. Stevenson has had over two years of public utility valuation work in addition to a variety of experience in general engineering construction covering steam and electric railways, highways, sewer and building construction. While employed by The Ohio Fuel Supply Company he located gas wells and gas pipe lines and engaged in drafting and mapping.

Experience with a general contractor has consisted of preliminary and location surveys for sewers, tunnels and building, responsibility for all engineering in connection with construction, cost analysis and estimating.

Railway experience has consisted of all phases from preliminary surveys to the completed roadbed and maintenance work, serving as resident engineer responsible for the completion in less than ten months of a seven and one half mile section of heavy double track construction.

J. S. Stevenson, for the past one and one half years has been engaged in gas engineering with The Columbia Engineering & Management Corporation, active in distribution, inventory reports and general gas engineering, preparation of distribution standards and specifications and testing equipment.

Qualifications of C. T. Koneeny

C. T. Koneeny is a graduate Chemical Engineer with nineteen years of practical experience in the manufactured gas field.

A summary of his experience is as follows:

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[fol. 387] The years 1908 to 1912, Lehigh University, South Bethlehem, Pennsylvania, Degree of Chemical Engineer.

The summer months during the college course were spent as Cadet Engineer in the Distribution Department of The Laclede Gas Light Company at St. Louis, Missouri.

1912 to 1914, Cadet Engineer, St. Clair County Gas Company, East St. Louis, Illinois.

1914 to 1916, Assistant Superintendent of coal and water gas plant for The Citizens Gas Company at Terre Haute, Indiana.

1916 to 1920, Gas Engineer for The Koppers Company, Pittsburgh, Pennsylvania.

1920 to 1922, Gas Engineer for United Service Company, Scranton, Pennsylvania.

1922 to 1930, Gas Engineer for Pennsylvania Power & Light Company, Allentown, Pennsylvania.

Mr. Konecny is experienced in the construction, operation and maintenance of town plant, distribution systems, and the operation and maintenance of manufactured gas plants, holders and appurtenant equipment. He has operated gas plants in Terre Haute, Indiana, and by-product plants in Jersey City, New Jersey, Camden, New Jersey, Rochester, New York and Washington, D. C.

Mr. Konecny has redesigned the distribution system and gas plant at Bristol, Pennsylvania, and laid out the distribution system for the Merchant ship-building village.

He has supervised gas operation and all new construction for the Pennsylvania Power & Light Company and subsidiary properties of the Electric Bond & Share Company in

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[fol. 388] Pennsylvania and Maryland.

During 1929 he was engaged in appraisal work for The Dayton Power & Light Company at Dayton, Ohio, and also in production and distribution work for The Union Gas & Electric Company, Cincinnati, Ohio.

Qualifications of A. D. Greene

A. D. Greene is a graudate Civil Engineer from The Ohio State University, Class of 1919. He has had eleven years of practical experience in the design and construction of oil refineries, gasoline and oil service stations, bulk plants, ocean terminals, natural gasoline plants, compressor stations, pipe lines and manufactured gas plants.

A resume of Mr. Greene's experience is as follows:

The year 1916, Rodman on Ohio Fuel Supply pipe lines surveys.

1917, Assistant Roadway Engineer for Ohio Electric Railway Company.

1919, Resident Engineer for State of Ohio, Division of Highways, on road construction in Clark County, Ohio.

1920, Engineer with Pure Oil Company, Experienced in mapping, structural design; Resident Engineer during refinery construction; Construction Engineer on Service Station construction; in direct charge of construction; Construction Engineer on refinery costruction; experienced in design and erection of special oil refinery equipment; experienced in design and construction of oil piping.

1928 to 1930, Engineer for Columbia Engineering & Management Corporation on design and construction of gas compressor stations, natural gasoline plants, manufactured

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[fol. 389] gas plants and gas transmission lines; writing reports on economics of proposed projects, with cost estimates, charts of special data, etc.

Qualifications of J. T. Shidecker

J. T. Shidecker is a graduate Civil Engineer with eight years of practical experience. This experience consists mainly of gas plant surveying, mapping and appraisal work, and State Highway and Municipal design and construction.

Briefly detailed, his experience is as follows:

The years 1921 to 1923, The Ohio Fuel Supply Company, mapping and planning in the drafting room and layout and survey of gas pipe lines, well locations, farms, and computing.

1923 to 1929, The Ohio State University, General surveying, design, layout and supervision of construction of roads, streets, sewers and heating tunnels.

1929 and 1930, Columbia Engineering & Management Corporation, Appraisal and Inventory, Pipe Lines and Compressor stations.

[fol. 390] Q. Now, Mr. Welker, directing your attention to questions asked by Commissioner Bricker, I want to ask you one respecting depreciation, and this depreciation exhibit. Does the depreciation set up in this Exhibit No. 7 represent your judgment of the depreciation of the property of The Columbus Gas & Fuel Company as set up in your Exhibit No. 2?

A. Yes, sir, it does.

Q. I think you testified that all of this inventory and appraisement was done under your direct supervision?

A. It was.

Commissioner Bricker: Did you observe any of the pipe
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[fol. 391] in the trenches and inspect any of the buildings or other properties which were depreciated, or did you take the figures as these others reported to you, believing them to be correct, after having appraised the worth of their engineering judgment?

The Witness: I made the appraisal of the reproduction cost new as to my direct supervision and judgment, and then I directed these men as to the methods that were my judgment as to obtaining depreciation, the observations as to which the data or the particular reading might have been made, or the particular computation was done under my direction in a method that would give me, according to my judgment, the correct depreciation or condition of the property.

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[fol. 392] L. A. SEYFFERT, called on behalf of the Complainant, being first duly sworn, testified as follows:

Examined by Mr. Turner:

Q. Mr. Seyffert, were you sworn?

A. I was, yes, sir.

Q. State your name, please?

A. L. A. Seyffert.

Q. What is your position with The Columbus Gas & Fuel Company?

A. Treasurer and Director.

Q. How long have you been treasurer?

A. About three years.

Q. What was your business experience prior to your becoming treasurer of The Columbus Gas & Fuel Company?

A. My previous experience has consisted in employment in the accounting department of the South Penn Oil Company, Pittsburgh, Pennsylvania, from 1902 to 1905. I had charge of all the accounts of the New Domain Oil Gas Company, Lexington, Kentucky, 1905 to 1909. I am Assistant Secretary and Assistant Treasurer and later Secretary and Treasurer of The United Fuel Gas Company, Pittsburgh, Pennsylvania, and Charleston, West Virginia, during the period from 1909 to 1922, and my duties in these offices placed me in full charge of the accounting matters.

Q. What are your duties as Treasurer of The Columbus Gas & Fuel Company?

A. I have general supervision of all money received and disbursed. I have charge of the accounts and the accounting department and records of the company.

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[fol. 393] FRANK W. PHILLIPS, called on behalf of The Columbus Gas & Fuel Company, being first duly sworn, testified as follows:

Examined by Mr. Turner:

Q. State your name and residence?

A. Frank W. Phillips, Columbus, Ohio.

Q. What is your position or occupation with the gas company?

A. Superintendent of Pressure Control for The Ohio Fuel Gas Company.

Q. How long have you been engaged in that work?

A. I have been with The Ohio Fuel Gas Company fifteen years and in charge of the pressure department for about nine years.

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[fol. 394] JAMES P. STRICKLER, called as a witness on behalf of The Columbus Gas & Fuel Company, being first duly sworn, testified as follows:

Examined by Mr. Turner:

Q. State your name please.

A. James P. Strickler.

Q. What is your occupation?

A. I am retired at the present time.

Q. What was your occupation?

A. Superintendent of Distribution of the Columbus Gas & Fuel and Federal Gas & Fuel Companies.

Q. When did you first go with either the Federal Gas & Fuel Company or the Columbus Gas & Fuel Company?

A. I started to work for the old Central Ohio Natural Gas & Fuel Company in 1889, November 7th.

Q. What was your business with the Central Ohio?

A. I was inspector on the distribution lines then being

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[fol. 395] installed in the city of Columbus.

Q. Who installed these distribution lines?

A. They were installed by Gibboney & Company, contractors for the old Central Ohio Natural Gas Company.

Q. Was the Central Ohio succeeded by what is now the Columbus Gas & Fuel Company?

A. That is correct.

Q. Just give to the Commission the year in which Gibboney & Company put down the mains?

A. The first mains they put down in Columbus was 1889.

Q. Those were the natural gas mains?

A. They were.

Q. Were they not?

A. Yes.

Q. Prior to that we had in this city the artificial gas system?

A. That is correct.

Q. Now, how long did you remain in that position with the Central Ohio?

A. Until the gas was turned on in the city.

Q. What year was it turned on in the city?

A. In the spring of 1890.

Q. And then what was your position?

A. I then was put in the meter department. No, I will take that back. Pardon me. After that I was turning on gas until meters were installed in the city, and then I took charge of meters.

Q. How long were you then in the meter department?

A. Until the year 1904.

Q. Then what was your position?

A. I was made superintendent of the Columbus Gas & Fuel Company. During the year 1905 I was made Superintendent of the Columbus Gas & Fuel Company, September, 1905.

Q. How long did you continue as superintendent of the Columbus Gas & Fuel Company?

A. Up until February of 1930.

Q. Were you ever purchasing agent for the Company?

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[fol. 396] A. I was.

Q. In what year?

A. I purchased practically all of the materials installed in the city from the year 1905 until 1914.

Q. How much of the plant, and by that I mean the distribution system in general as well as the structures, of the Columbus Gas & Fuel Company have you actually seen?

A. Oh, five-eighths to three-quarters of it.

Q. How much of it was installed under your supervision as Superintendent?

A. I think that when I was made Superintendent there was about 185 miles in the city.

Mr. Butler: What year was that?

The Witness: That was in 1905. That is my recollection. All of the lines installed since that time have been under my supervision and I have seen practically all of them.

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[fol. 397] BLEECKER L. WHEELER, called as a witness on behalf of The Columbus Gas & Fuel Company, being first duly sworn, testified as follows:

Examined by Mr. Turner:

Q. State your name and address.

A. Bleecker L. Wheeler.

Q. Where do you reside?

A. Montclair, New Jersey; business address, 39 Broadway, New York.

Q. By whom are you employed?

A. Ford, Bacon & Davis, Incorporated, engineers.

Q. What is the business of Ford, Bacon & Davis generally in their engineering line?

A. Ford, Bacon & Davis, Incorporated is a large firm of industrial engineers, having offices in several parts of the country, engaged in consulting engineering work, industrial valuations and appraisals, management work, and construction and design work; all sorts of engineering, business reports for financial purposes, generally classified under industrial engineering.

Q. Has Ford, Bacon & Davis, Incorporated, made an appraisal of the going concern value of The Columbus Gas & Fuel Company?

A. Yes, sir.

Q. I hand you what has been marked for identification as company's Exhibit No. 63, and ask you if that is a copy of that appraisal?

A. It is. I have the original signed copy here.

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[fol. 398] And thereupon the document above referred to was marked for the purposes of identification as company Exhibit No. 63.

Q. What individuals in Ford, Bacon & Davis, Incorporated, made that appraisal?

A. In accordance with the regular procedure of the organization, the appraisal was made under the supervision of one of the directors of the firm, with a senior engineer, and, if necessary, others engaged in it. In this case the director, was Mr. Emery, who supervised and consulted in the preparation. The senior engineer was myself.

Q. As of what date was the appraisal made?

A. As of December 31, 1929.

Q. Now, give me your experience and qualifications as an engineer please?

A. I am a graduate engineer, Columbia School of Mines, New York. My experience in valuation work during the last eleven or twelve years has been;—for about two and a half years I was valuation engineer and chief engineer of the Amortization Section of the Revenue Bureau in Washington, engaged in the valuation of industrial plants throughout the United States, having to do with special deductions for the amortization of wartime acquired assets. That work involved the determination of the salvage value, or the value in use, or utility value, of assets of all kinds. And the report was made when the valuation was made to the government and was used in fixing the values for tax purposes on those assets.

During the past nine years I have been a senior engineer on the staff of Ford, Bacon & Davis. The first two or three years of that time largely on work connected with special amortization cases which they had and which were similar

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[fol. 399] in nature to that already mentioned.

During the past six or seven years my work has largely been the valuation of properties for various purposes, for financing, for mergers or consolidations, for what we term business reports, involving the value of physical assets and intangible assets, such as patents, trade names and good will, going concern, the determination of the sufficiency of natural resources in cases where those were involved, such

as cement plants requiring limestone and mining properties, the determination of rates on toll bridges, and other business operations, and general industrial valuations for all types of plants.

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[fol. 400] And also—

ARTHUR S. DEWING, called as a witness, being first duly sworn, testified as follows:

Examined by Mr. Turner:

Q. State your name please?

A. Arthur S. Dewing; residence, Cambridge, Massachusetts.

Q. What is your business or profession, Mr. Dewing?

A. I have two. I am a college professor, and I am an operator of utilities.

Q. Tell us about your connection with utilities?

A. At the present time I am President of the White Mountain Power Company and some six or eight various companies in New Hampshire, two or three in Maine. I am Vice President of a company that owns some electric companies in Nebraska, some natural gas properties in Pennsylvania. I am a director of a company that owns some electric properties in Ohio, natural gas properties in Texas and Oklahoma, electric properties in Maryland. I have been operating utilities since approximately 1915.

Q. What experience had you had, if any, in buying and selling utilities?

A. My chief service has been in the purchase of utilities. For example I bought the Bowling Green property here in Ohio of the old Atlantic Public Utilities, I promoted and was President for awhile of the Atlantic Public Utilities. Since 1915 I have been actively engaged in the purchase of utilities of various types.

Q. With what college or university are you connected?

A. I am Professor of Finance in Harvard University.

Q. In the branch known as the Graduate School of Busi-

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[fol. 401] ness Administration?

A. Graduate School of Business Administration.

Q. I wish you would tell the Commission briefly something about the investigations of utilities and concerns gen-

erally that are made by the Harvard School of Business Administration.

A. Why the school has a Research Department, which is engaged in ascertaining fundamental principles underlying all kinds of businesses. There is a Department of Public Utility Administration, of which I am not, however, a member. This department, The Research Department, concerns itself with all kinds of business problems, problems of valuation, problems of merchandising, problems of operation, factory operation, particularly problems of accounting.

Q. What experience have you had as a teacher of accounting?

A. I taught accounting for three years in Yale University.

Q. Of what University are you a graduate of?

A. I graduated from the Academic Department of Harvard University and studied in the University of Munich, and a Doctor of Philosophy from Harvard University, and taught Economics in Yale and in Harvard for a number of years before appointment to professorship of finance.

Q. Are you the author of any books?

A. I wrote a book entitled, "The Promotion and Reorganization of Industrial Corporations." I wrote a book entitled, "The Financial Policy of Corporations," and various smaller works.

Q. I wish you would briefly outline the research, if any, you have conducted into the financial operation of utilities and other corporations.

A. I was retained by the Corn Products Refining Company. At one time I was very much interested in the Sherman Act and was retained by the Corn Products Refining

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[fol. 402] Company to prepare the brief that went to the United States Supreme Court on appeal from the New York District. Laterally I have carried on various investigations in the public utility field concerning the legality of the theory of the police power of states, the jurisdiction of commission regulating and problems of that kind.

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[fol. 403] F. C. Hamilton, called on behalf of The Columbus Gas & Fuel Company, being first duly sworn, testified as follows:

Examined by Mr. Turner:

Q. State your name, please?

A. F. C. Hamilton.

Q. And what is your business, Mr. Hamilton?

A. I am a member of the Executive Committee of Henry L. Doherty & Company.

Q. And what is the business of Henry L. Doherty & Company?

A. They operate all of the properties belong to the Cities Service Company.

Q. Just describe the properties, briefly, of the Cities Service Company?

A. They consist of public utilities, including, in Ohio, the Toledo-Edison and the Ohio Public Service Company, the Gas Service Company, which operates a lot of natural gas

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[fol. 404] distributing companies in 50 or 60 towns in Kansas, Missouri and Oklahoma, including Kansas City, Wichita, Topeka, Joplin, Springfield and so on.

Q. How long have you been connected with the Doherty Company?

A. Since April, 1917.

Q. What was your business prior to that?

A. I worked for Harold Almert, a consulting engineer with offices in the Rookery Building, in Chicago.

Q. For how long were you with him?

A. I was with him for about two and half years.

Q. And prior to that time?

A. I was with Arthur Young & Company, public accountants.

Q. For how many years?

A. About two years, as a remember it.

Q. And prior to that?

A. I was chief clerk of The Western Electric Company at Chicago.

Q. Have you had any experience in the buying and selling of utility properties?

A. My work for the past four years has been almost completely devoted to the purchase and sale of properties, performing that function for the Cities Service organization. I have now and did have prior to that charge of the department of valuation and rate making for them from 1917 to date.

Q. How many natural gas properties has the Cities Service of the Doherty Organization?

A. I do not know how many there are altogether. They own the Cities Service Pipe-Line Company which supplies these various distributing companies which I named in the Mid-Continent field. They control The Arkansas Natural Gas Company in Louisiana and Arkansas, and they control

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[fol. 405] The Dominion Gas Company which operates around New York and in the southern part of Ontario, with a pipe line extending from just east of Detroit to Hamilton, Ontario.

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[fol. 406] CHAUNCEY ILES WEAVER, called on behalf of The Columbus Gas & Fuel Company, being first duly sworn, testified as follows:

Examined by Mr. Turner:

Q. State your name, please?

A. Chauncey Iles Weaver.

Q. What is your business, Mr. Weaver?

A. Vice President and General Manager of The Ohio Fuel Gas Company.

Q. Where were you educated?

A. Kansas, and the Armour Institute, Chicago.

Q. Give the Commission a little outline of your experience; you are a graduate engineer, I take it?

A. Yes, sir, an electrical engineer.

Q. All right.

A. After my graduation in 1906 I was for two years at

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[fol. 407] the Schenectady works of The General Electric Company, testing engineer.

For four years thereafter I was sales agent in Minneapolis and Chicago, selling electrical equipment.

From 1912 until 1915 I was sales manager of what is known as The Commonwealth & Southern Organization in Michigan.

1915 until 1918, Manager of the Eastern Michigan Power Company, which company did the engineering and construction work for the Consumers Power Company of Michigan.

From 1918 until 1930, I was Vice-President and General Manager of The Ohio Edison Company, Springfield, Ohio, which company carried on an electric light and power business and steam heating.

From 1930 until 1931, Vice President and General Manager of The Ohio Fuel Gas Company.

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[fol. 408] P. ANTONELLI, called for purposes of cross-examination, being first duly sworn, testified as follows:

Cross-examination.

By Mr. Butler:

Q. State your name?
A. My name is P. Antonelli.
Q. You reside where?
A. I live in New York City.
Q. And your business or profession?
A. I am an electrical and mechanical engineer.

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[fol. 409] Q. And your age?
A. I am 38 years old.

Q. I think it is only fair to you, Mr. Antonelli, that I should let you state in a general way your education and qualifications for the Commission, and for the record; that is usual; so that you may do that.

A. I graduated in grammar school and high school in Europe, and in 1916 I completed an electrical engineering course in Crane Technical College in Chicago, and in 1919 I graduated as a mechanical engineer from Cornell University at Ithaca, New York.

Since my graduation I have been connected with Ford, Bacon & Davis, Engineers, and have been engaged in preparing various valuations for all kinds of utilities, gas, electric, water, steam; also industrial plants.

I have assisted in the design of pipe lines, distribution plants, and have made preliminary estimates for new construction work and have worked with contractors that laid lines; and all kinds of other work that we do in our office.

Among the principal valuations that I have done some work on are:

The Peoples Natural Gas Company,
The Hope Natural Gas Company,
The Logan Gas Company,
The East Ohio Gas Company,
The United Fuel Gas Company,
The Western Ohio Public Service Company,
The Atlantic Refining Company,
Central Hudson Gas Company,
Empire Gas & Fuel Company,
Plattsburg Light, Heat & Power Company,

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[fol. 410] Potter Gas Company,
Sinclair Oil Company,
Tri-County Gas Company,
Oklahoma Natural Gas Company,
Kansas City Gas Company,
Delaware Gas Company,
Ohio Fuel Gas Company,
The Huntington Development & Gas Company,
The Southwestern Utilities Company,
The Southern Natural Gas Company,

and a lot more companies; I don't think it is necessary to enumerate any more.

Commissioner Geiger: What did I understand you have done in connection with them?

The Witness: I have prepared inventories and priced some of the accounts; developed unit prices and made analyses of costs, time studies and inspecting pipes, etc.

By Mr. Butler:

Q. Have you been in direct charge of any of these inventories and appraisals?

A. No, I have not. I have worked under the direction of a senior engineer, such as the one we have in The Ohio Fuel Gas Company, Mr. F. H. Lerch, Jr.

Q. You have usually worked under him?

A. Not always under him; I have worked under other engineers in our organization.

Q. Well, my question was whether usually—not wholly, but usually?

A. No.

Q. How much work did you do in the United Fuel Gas case that has been before the Public Service Commission of 1977
[fol. 411] West Virginia and now in the Supreme Court in that State?

A. I had direct charge of the work in the field and checked the inventories; developed some of the unit costs.

Q. Mr. Lerch was the one at the head of that work?

A. That is correct, yes, sir.

Q. Well, in the Dayton case, under whom did you work?

A. I worked under Mr. Lerch.

Q. And in the Logan case under whom did you work?

A. Under Mr. Edgar Hill.

Q. And now in the Cleveland case or rather in the Cleveland dispute and investigation, under whom did you work there?

A. I worked under Mr. J. T. Kimball.

Q. For how many Columbia subsidiaries have you done work?

A. I believe for all of the Columbia subsidiaries; I think so; practically all, I imagine.

Q. That is, your firm of Ford, Bacon & Davis is generally retained for their work?

A. No, sir.

[fol. 412] F. H. LERCH, called for purposes of cross-examination, being first duly sworn, testified as follows:

Cross-examination.

By Mr. Butler:

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[fol. 413] A. My name is F. H. Lerch, Jr. I live at Monroe, Louisiana. I am employed by Ford, Bacon & Davis, Incorporated, Engineers, of 39 Broadway, at the present time, as manager—general manager of certain Louisiana natural gas property which they are operating under contract.

I am also vice president and general manager of one of these companies, in Louisiana.

I am a graduate of Lafayette College at Easton, Pennsylvania, in the year 1909, with the degree of Bachelor of Science.

My experience after leaving college—I do not know how detailed you want me to go into that, Mr. Butler.

Q. Well, it is rather a matter for you and Mr. Turner to determine. I think it is only fair that you should state it rather fully, Mr. Lerch; I think you are entitled to that.

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[fol. 414] A. Upon graduation from college I went to work for The Empire Steel & Iron Company, a company operating four blast furnace plants, five furnaces all told, and two iron ore mining properties in Pennsylvania and New Jersey.

I stayed with that company four years and during that time I was assistant chemist, furnace boss, did time keeping, store keeping and a certain amount of cost work, and was superintendent of one of the plants.

I next went to work for the T. A. Gillespie Company, a contracting firm in the City of New York. The contract that they were then engaged on was in the reconstruction of the elevated structures in the City of New York. This contract called for the expenditure of something better than fifteen million dollars and included the building, rebuilding and revamping of the elevated structure rapid transit system. In this particular employment I had to do mostly with the estimates, cost of construction, and spent about one-third of my time out on the work.

In 1917 I went to the munition plants owned and operated by The T. A. Gillespie Company, under several names, as executive assistant to the vice president and general manager of those companies. I stayed there until shortly after the close of the war, and then went as assistant civilian property manager in the army ordnance office for the District of New York. This office handled all of the physical property for contractors in the area and generally for contractors who had offices in New York, the contracts covering war materials of all descriptions and plants of all descriptions which were constructed on account of these contracts.

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[fol. 415] Our work was the handling of the property involving materials furnished by the Government and purchased for the Government's account, as well as the plants themselves which were either taken over by the Government or settled in some way in the settlement of their claims.

In the summer of 1920 I went with Ford, Bacon & Davis, with whom I am still employed, and during practically all of my employment with Ford, Bacon & Davis I have been engaged in valuation and rate case work, and promotion, organization and operation of natural gas industries.

For the first three or four years I was assistant to Mr. C. F. Ubelacker, a member of the firm who specialized in rate case investigations and valuations; and since that time I have been doing very much the same kind of work that he did.

Since 1926 I have done more particularly work along management lines, the promotion of natural gas companies, developments of propositions of all kinds, including field work, transmission and distribution work, and am now doing just about the same kind of work.

The companies for whom this work was done have covered practically all of the larger gas companies and many small ones in all sections of the United States except the Pacific Coast. It also includes work done in the Province of Alberta in Canada, for both the natural gas company centering at Calgary and the natural gas company centering at Edmonton, both in Alberta.

The companies include such companies as The Hope Natural Gas Company, The Peoples Natural Gas Company —that is, the Hope is in West Virginia and the Peoples

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[fol. 416] in Pittsburgh; The East Ohio Gas Company, in Cleveland; The Clarksburg Light & Heat Company, in West Virginia; The Reserve Natural Gas Company, in West Virginia, and numerous other companies in Louisiana. They were rather small companies. And all of that work, as I say, has included the making of valuations, assisted in making valuations, in estimating investments possibilities, studying propositions from a promotion point of view, and in operating the company itself after it has been organized, and also in constructing companies and additions to companies.

Q. Mr. Antonelli told us the other day that he had been engaged in work of one kind or another for almost every subsidiary of the Columbia System; would that apply to you in a broad way?

A. No, it would not apply to me. There have been other jobs in the office, you understand, that I would not have

anything to do with, and Mr. Antonelli would be assigned to that job under some other chief.

Q. Have you, along with others, represented some of the Standard Oil Companies in their rate litigation?

A. Yes, sir.

Q. Were you with some one in the old Cleveland litigation?

A. I was with Mr. Ubelacker in the Cleveland litigation.

Q. In the present Cleveland controversy have you any connection?

A. None at all.

Q. You were in charge of the inventory and appraisement involved in the present rate case of the United pending before the Commission in West Virginia?

A. Yes, sir.

Q. And you were also associated with some one in the 1923 litigation?

A. Mr. Ubelacker occupied the position—the supervisory

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[fol. 417] position in the 1923 valuation, which was really made in 1924, but it has been known as the 1923 rate case, and I was his principal assistant in that work.

Q. Subject to his general directions you had charge of that?

A. Yes, sir.

Q. Now here in Ohio, outside of the Cleveland controversies, where have you been engaged in rate litigation?

A. The Dayton Power & Light Company, just recently before the Commission, and in this particular case that I am in right now. That is, this is the starting of it.

Q. Are you in what we call the 60-City or Village rate case?

A. Yes, sir.

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[fol. 418] A. B. DALLY, JR., called for purposes of cross-examination, being first duly sworn, testified as follows:

Cross-examined by Mr. Davies:

Q. State your name.

A. A. B. Dally, Jr.

Q. And where do you live, Mr. Dally?

A. Pittsburgh, Pennsylvania.

Q. And what business are you engaged in?
A. The production and sale of natural gas and oil.
Q. How long have you been engaged in that business?
A. More than 35 years.
Q. Are you associated with any company or companies at this time—gas company or companies?
A. I am.

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[fol. 419] Q. What are they?
A. I am associated in the Benedum-Trees Interests, and am individually president of the Penn-Ohio Gas Company; president and general manager of the South Hills Oil & Gas Company; vice president of the Plymouth Oil Company; vice president and director of the Big Lake Oil Company, director of the Arkansas Natural Gas Company; and a director in the Arkansas Fuel Oil Company.
Those are the principal companies that I am associated with.
Q. Are any of those companies public utility companies or do any of those companies do a public utility service?
A. Yes, sir, the Arkansas Natural Gas Company does public utility business.
Q. What about the Penn-Ohio?
A. The Penn-Ohio is a producing company.
Q. Does it sell to public utilities?
A. It does not at the present time.
Q. To what sources does it sell?
A. It sells to utility companies in the field, and that is principally its business; contractors and drillers and so on.
Q. You say it sells its product to utilities in the field?
A. Yes, sir.
Q. And utilities take it from the field?
A. They buy it in the field.
Q. They buy it in the field and transport it from the field to their various centers?
A. Yes, sir.
Q. Do you have a pipe line then in connection with your company?
A. We have in the South Hills Oil & Gas Company; that

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[fol. 420] sells direct to industrial consumers.
Q. In Ohio?
A. No, in Pennsylvania.

Q. What operations do you have in Ohio?

A. The Penn-Ohio is the operating company in this state.

Q. And to whom does it sell in Ohio?

A. It sells to the Ohio Fuel Gas Company, to the Natural Gas Company of West Virginia, to the East Ohio Gas Company.

Q. And those three companies are all public utility companies, aren't they?

A. Yes, sir.

Q. And of course you have a financial interest in each one of these companies of which you are an officer and director that you have just named?

A. Personally I do.

Q. Do any of these companies have acreage in Ohio leasehold acreage in Ohio?

A. The Penn-Ohio have a considerable acreage.

Q. Where; in what counties?

A. Well, they are in possibly 15 or 16 counties, starting in with Ashtabula, and in Trumbull, Stark, Summitt, Tuscarawas, Licking, Jackson, Morgan, Monroe, Noble and Lawrence; there may be another county or two.

Q. Approximately how much leasehold acreage has that company in Ohio?

A. I don't know the exact acreage now.

Q. Approximately?

A. But approximately 60,000 acres or better.

Q. Do you have any personal interest in any leaseholds in Ohio aside from your interests through these companies that you have mentioned?

A. I do not.

Q. Have you had such personal interest within the last

2986

[fol. 421] three or four years, say?

A. I have not.

Q. What experience have you had personally in leaseholds, gas leasehold interests in Ohio, within the last few years?

A. Well, in the time I have been in business, it was a considerable amount of land, some of it myself personally and had it leased in the companies I have been with.

Q. I am speaking now, of course, of Ohio?

A. In the State of Ohio, yes, sir, extending over 30 years, that length of time, or, more properly speaking, 28 years ago, I had an acreage of something like 200,000 acres leased up in this State.

Q. Was that a personal matter?

A. No, sir.

Q. What company was that involved with?

A. That was taken up for the Freehold Oil and Gas Company and the Wheeling Natural Gas Company.

Q. And about how long ago was that?

A. 28 years ago.

Q. And when after that were you interested in any sizeable acreage?

A. Up until the present time through the companies.

Q. Through the companies only?

A. Yes, sir.

Q. And there is only one company that is operating in Ohio?

A. At the present time.

Q. Well, have any of these companies been operating in Ohio in the past?

A. Yes, sir, the Arkansas Fuel Oil Company operated in this state.

Q. When?

A. Up until—it is operating now, but up until—it started about 1912 or 1913 and has been operating since that time in this State.

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[fol. 422] Q. How much acreage has it in Ohio approximately?

A. I could not say now; the management of that company is in other hands and they have producing wells and acreage, but I do not know what the acreage is.

Q. You have not been following that up?

A. Not closely.

Q. Is it a public utility company?

A. It is not; I might say, though, that it is owned by a company that is a public utility company.

Q. What company is that?

A. It is a subsidiary of the Arkansas Natural Gas Company.

Q. Where does the Arkansas Company serve in Ohio?

A. It don't serve as a utility in Ohio.

Q. Does it serve at all?

A. It serves in the States of Arkansas, Texas and Louisiana.

Q. As a public utility?

A. As a public utility, yes, sir.

Q. Where does it sell its product here in Ohio?

A. The Arkansas Fuel Oil Company, a subsidiary of the Arkansas Natural Gas Company, sells to the East Ohio and to the Ohio Fuel Supply Company.

Q. As you have said before, both of which are public utility companies?

A. Yes, sir.

Q. Where is the acreage of that company located, the Arkansas Company?

A. Principally in Wayne, Medina, Holmes, some in Stark, I believe, Hocking, and there is another county, Morgan, and one other county here; I don't know just what it is but it is in central Ohio.

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[fol. 423] Q. You are not able to state what its acreage is, its leasehold acreage?

A. No; it is considerable.

Q. Is it as much as the Penn-Ohio?

A. No, sir.

Q. It is smaller than that?

A. It is smaller than that, yes, sir.

Q. Have you appeared as a witness in testifying to the value of gas leasehold acreage in any other cases besides this one?

A. I have.

Q. What cases?

A. The principal one, or the latest one, I believe, is the Iroquois Gas Company in Buffalo.

Q. And are you the same Mr. Dally that testified in what we call the United Fuel case in West Virginia?

A. Yes, sir, that was a little later, I was in that; I should have stated that; I was in that case.

Q. Where you fixed the values as of December 31st, 1928, I believe in that case?

A. Yes, sir.

Q. And are you the same Mr. Dally that appeared as a witness in what we call the Logan Gas case that was before this Commission?

A. Yes, sir.

Q. Have you appeared as such a witness in any other case that you recall now?

A. No, I don't recall any others; we had a little case in Arkansas, too, but that has been 12 years ago; I appeared in that as a witness before the Arkansas Public Utilities Commission.

Q. I assume that you are volunteering your services in this case as you did in the United case and in the Logan case.

A. Entirely.

Q. Except that you hope to collect your expenses?

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[fol. 424] A. Possibly.

Q. In connection with the trip here?

A. I let them send those to me but I have no arrangement about it. I was asked to testify and do that and take my chances on my expenses.

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[fol. 425] And also—

GEORGE WITTMER, JR., called for purposes of cross-examination, being first duly sworn, testified as follows:

Cross-examined.

By Mr. Davies:

Q. State your name?

A. George Wittmer, Jr.

Q. Where do you reside, Mr. Wittmer?

A. Pittsburgh.

Mr. Turner: May I explain one thing here? Mr. Dally calls my attention to the fact that the so-called Cash Dollar purchase you brought out was 106,000 acres, while we only have 60,000 acres left; if there is any question about that they have sloughed that off.

Mr. Davies: All right; I had forgotten about the discrepancy in the figures.

Q. And what is your business, Mr. Wittmer?

A. Gas and oil.

Q. How long have you been engaged in that business?

A. Since 1895.

Q. Are you an officer or employed by any gas company at this time?

A. I am.

Q. What company?

A. The American Natural Gas Company and the Wittmer Company; Wittmer Oil & Gas Properties also, a subsidiary.

Q. And where do they operate, these two companies?

A. The American Natural Gas Company operates in Pennsylvania. The Wittmer Company and The Wittmer Oil & Gas Properties operate in Ohio, Michigan, New York, Kentucky, Oklahoma, Texas, New Mexico; I think that about covers it.

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[fol. 426] Q. Does that about cover it?

A. I think so.

Q. I thought maybe you would go to Europe before you quit. How large a company is your Wittmer Company; what is its capitalization?

A. The Wittmer Company is a subsidiary.

Q. Of what?

A. Of the Wittmer Oil & Gas Properties; The Wittmer Oil & Gas Properties is a trust.

Q. A holding company?

A. Yes.

Q. And about how much acreage does it have altogether, gas leasehold acreage?

A. I would say 250,000 acres.

Q. Altogether?

A. Yes.

Q. How much of that in Ohio?

A. Probably 100,000.

Q. And any of it operated, with wells on it now?

A. Yes, sir.

Q. How much, in acreage?

A. I cannot tell you.

Q. Well, about how much?

A. In the No. 1 and No. 2 class, being contiguous, 25 per cent.

Q. 25 per cent of what?

A. Of 100,000 acres.

Q. That would be 25,000 acres?

A. Yes, sir.

Q. How much in what is designated as operated, No. 1, with wells on it; how much of that?

A. I cannot tell you exactly.

Q. Well, about how much?

A. 10,000 acres.

Q. It might be more or less?

A. Yes.

Q. How many wells operating on that territory?

A. In Ohio we probably have 40 to 50 wells.

Q. On the 10,000 acres?

A. Yes, sir.

Q. And what county or counties is that acreage in?

A. At the present time we are operating in Monroe—

Q. How many wells in Monroe County?

A. Approximately half a dozen. Muskingum——

3094

[fol. 427] Q. How many wells?

A. I would say eight to ten wells. Perry County——

Q. How many wells there?

A. Five or six. Vinton County; in Vinton County we probably have four or five wells. Coshocton and Licking Counties, right close together, we are interested in about half a dozen. In Stark County six—five or six wells. In Shelby County we have few small oil wells.

Q. Well, we are just interested in gas, Mr. Wittmer.

A. Well, the wells in Perry County mentioned a few moments ago are oil wells.

Q. Are there any others you mentioned that are oil wells as you have gone along?

A. They are both oil and gas in Muskingum County.

Q. I expect we are getting confused. Of course we are only interested here today in gas wells. (No reply.)

Commissioner Geiger: Would it make a great amount of difference; he said he only has 50 wells in Ohio.

Mr. Davies: I see. He said about 25 wells in Ohio.

Commissioner Geiger: Well, you are simply qualifying him as to his ability; that is enough.

Q. But you have—in the enumeration you have made you have included gas and oil wells?

A. Yes.

Q. And your best recollection is that altogether you have about 25 gas wells in your 10,000 acres in Ohio?

A. I am only saying that, qualifying—I don't know; I can't tell you exactly, unless I would enumerate them.

Q. I see; what is your relationship to the Wittmer Company; do you have an official capacity with them?

A. The Wittmer Company, I am a director and treasurer. 3095

[fol. 428] Q. Well, first of the holding company?

A. The Wittmer Oil & Gas Properties is a holding company; The Wittmer Company is a corporation registered in Ohio, Michigan and New York, a subsidiary.

Q. And what is your relationship with it?

A. Director and treasurer both in the Wittmer Company and The Wittmer Oil & Gas Properties.

Q. Now what is your official capacity with the holding company?

A. Director and treasurer.

Q. And are you the owner of stock in both of those companies?

A. Yes, in the Wittmer Company—I mean The Wittmer Oil & Gas Properties. The Wittmer Company and The American Natural Gas Company, both subsidiaries, the stock is all owned by The Wittmer Oil & Gas Properties.

Q. And what is your position with the American Company?

A. Vice President, treasurer and a director and general manager.

Q. Does your Wittmer Company operate as a utility in Ohio?

A. No, it does not.

Q. How do you dispose of your gas?

A. To the utilities.

Q. To utilities?

A. Yes.

Q. What Utilities?

A. The Ohio Fuel Company, East Ohio Company.

Q. Do you mean Ohio Fuel Gas Company?

A. Yes, The Ohio Fuel Gas Company; The East Ohio Gas Company, and The Gas Company of West Virginia, which is a subsidiary of The Ohio Fuel Gas. That is my impression; I may be in error.

Q. Do you know the name of it? 3096

[fol. 429] A. The Gas Company of West Virginia.

Q. Oh, it is called The Gas Company of West Virginia?
A. Yes, sir.
Q. It is not The United Gas Company?
A. Oh, no.
Q. That is all of the companies to which you sell your gas, as I understand it?
A. I think it is, yes.
Q. And they are all public utilities, I believe, aren't they, or practically all?
A. Yes, sir.
Q. Do you have personally any interest in any gas land or gas leaseholds in Ohio?
A. Not personally, no, sir.
Q. Aside from companies?
A. I do not.
Q. Have you had any experience in the Ohio gas leaseholds aside from the company's experience?
A. In a minor way.
Q. What do you mean by "a minor way", Mr. Wittmer?
A. Well, we go out and take up leases and drill them for oil or gas; in some cases we have been successful and in others unsuccessful.
Q. Who do you mean by "we"?
A. Others of our firm, employees, or even outside people.
Q. You go out on a personal venture?
A. Yes, sir. 3096

[fol. 430] By Mr. Davies:

Q. Have you ever acted as an appraiser in any other case, Mr. Wittmer, besides this one?
A. Yes, I have.

3097

Q. In what cases?
A. The Philadelphia Company in Pittsburgh, The Peoples Natural Gas of Pittsburgh, The Iroquois Gas Company of Buffalo; I think that is all.
Q. Did you ever appear in an Ohio case?
A. I don't think I have.
Q. Were you a witness in the Logan case?
A. I was not.
Q. Nor in the United Fuel Gas Company—United Fuel Gas Company in West Virginia?
A. No, I was not a witness in that case.

3175

[fol. 431] SAMUEL W. MEALS, called as a witness, being first duly sworn, testified as follows:

Cross-examined by Mr. Davies:

Q. State your name?
A. Samuel W. Meals.
Q. And where do you reside, Mr. Meals?
A. Pittsburgh, Pennsylvania.
Q. What is your business, please?
A. I am in the gas business.
Q. How long have you been in the gas business?
A. Over 40 years.
Q. With what company or companies are you now associated in the gas business?
A. I am president of the Carnegie Natural Gas Company.

3176

[fol. 432] Q. How long have you been president of that company?
A. I think eleven years.
Q. And what is the nature of its business?
A. Mostly supplying industrial plants of the United States Steel Corporation, and we have some domestic connections.
Q. Some domestic in connection with that?
A. Yes, sir.
Q. In what State?
A. Pennsylvania.
Q. What other gas interests have you been connected with during your 40 years referred to?
A. I was with the South Penn Oil Company.
Q. With what?
A. South Penn Oil Company, that had a gas department also; about ten years with them.
Q. And where was that company operating?
A. That was in West Virginia and also in parts of Pennsylvania, the south part, along the West Virginia line.
Q. And what was your connection with that company?
A. I was superintendent of one of the distribution — at that time.
Q. And what was the nature of its business?
A. Mostly oil business, but we had considerable gas business in connection with it.

Q. The gas business was an incident in that case, was it?
A. Yes, it was.
Q. And any other?
A. Well, for a period between the time I was with the South Penn Oil Company and going with the Carnegie, I, with others, organized a little company that did some drilling for gas and oil and we produced considerable gas; sold it, however, to other utilities.

3177

[fol. 433] Q. And where was that operation?
A. It was in West Virginia.
Q. Are you connected with any other gas company now other than the Carnegie Company?
A. I have some stock in another company and its principal business is gas, I believe; we have some oil production; that company, however, operated some in Ohio—not much; mostly in Pennsylvania and West Virginia.
Q. Have you in recent years had any personal interest in any leasehold acreage?
A. Yes, sir.
Q. Such leases as you have appraised in this case?
A. Yes, sir, I have.
Q. Have you had such interests in leaseholds in Ohio?
A. Yes, I was interested in some in Ohio.
Q. Were you so interested in leaseholds in Ohio in 1929 and 1930?
A. Yes, sir.
Q. Are you now interested in such leaseholds in Ohio?
A. In one or—oh, there is more than that; I believe there is about half a dozen leases I am interested in in Ohio at this time, and I was in 1929.
Q. And just in a general way, where are those leases located?
A. They are in Perry County.
Q. And what was the approximate amount of acreage of those leases that you are so interested in, or have been?
A. I think there is 700 acres in one block and possibly about 500 acres in the other if I recollect correctly.
Q. Are those properties gas properties or gas and oil properties?
A. The one is oil and the other is gas.
Q. In other words, your 500 acres—

3178

[fol. 434] A. That is gas.

Q. And your 700 acres is oil?

A. Yes, sir.

Q. Oil only?

A. Yes, sir.

Q. And gas only?

A. Yes, sir.

Q. I understand you to say that those are the only leases you are interested in in Ohio now?

A. Personally, yes, sir.

Q. And were you interested in any other such leases in 1929 or 1930 when you were considering the valuation of the leases in question here?

A. No.

Q. Is the Carnegie Company interested in any leases in Ohio?

A. We had quite a block of acreage at one time between Cleveland and Lorain; I think we drilled about seven wells in there at that time but we sold the wells and the leaseholds a number of years ago.

Q. Your Carnegie Company has no leasehold acreage in Ohio now?

A. No, sir.

Q. Do you recall how long ago you sold the acreage that you just referred to?

A. It is more than 20 years ago.

Q. Have you appeared before as an appraiser of gas leasehold acreage in any rate case or cases?

A. I have, I am sorry to say.

Q. Do you recall what cases you did so appear in—with regret?

A. Well, I was a witness in the case of the Philadelphia Company in Pennsylvania.

Q. How long ago was that?

A. Six or seven years ago, I believe; I was a witness in the Peoples Natural Gas Company case also in Pennsylvania.

Q. About when was that?

3179

[fol. 435] A. About the same time; I also was a witness in the Iroquois case at Buffalo several years ago.

Q. And are you the same Mr. Meals that appeared as a witness in the so-called Logan case before this Commission several years ago?

A. Yes, sir.

Q. Mr. Meals, who approached you on the subject of being an appraiser in this case?

A. Mr. Newman of the Ohio Fuel.

Q. And did you know at the time of the appraisement who the other appraisers were, or what other appraisers would be used?

A. I believe that Mr. Newman told me that he was going to try to get Mr. Wittmer and Mr. Dally, and he asked me to go over the data.

Q. In the course of your work in connection with the appraisal did you meet any of those appraisers at any time?

A. Not with reference to the valuation, as to the figures of valuation, no, sir; I made them from day to day. I knew nothing of what valuation they placed on these properties until I came over here.

Q. Did you discuss the valuation with them or the problem of valuation at any of those times?

A. No, not as a valuation. Perhaps I may have mentioned something about certain factors in connection with it but nothing as to the valuation.

Q. But you do think that you did discuss the question of factors of valuation at different times when you met them?

A. Not often; I may have spoken to Mr. Dally or Mr. Wittmer once or twice in regard to certain factors.

Q. Do you remember about when you began your study of this valuation?

A. It was about a year ago, something near a year

3180

[fol. 436] ago when the data was brought over to my office.

Q. Similar to what you see on the table to your right?

A. Yes, sir; I have been going over it off and on since that time.

Q. Do you think that would be probably in June of last year?

A. I think around May or June of last year, in the neighborhood of that time.

Q. And do you recall when you made your report?

A. I think January of this year.

Q. And in what form did you make your report?

A. In a letter.

Q. In a letter?

A. Yes, sir.

[fol. 437] D. S. WEBER, recalled for purposes of cross-examination, continued his testimony as follows:

Examined by Mr. Davies:

3248

[fol. 438] Q. What is your name?

A. D. S. Webber.

Q. Where is your home, Mr. Webber?

A. Columbus.

Q. And what is your business?

A. Buying and selling gas and oil territories.

Q. Are you now connected with a gas company or companies?

A. No, I am not.

Q. In any way?

A. I am for myself.

Q. How long have you been in this field?

A. In Ohio continuously——

Q. No, in your present business capacity as a broker?

A. Only since 1927.

Q. And how were you employed before that?

A. I was for 15 years with the Ohio Fuel Supply Company. Prior to that I was about 10 years with the various companies, Standard interests in Pennsylvania and West Virginia and New York.

Q. Was the Ohio Fuel Supply Company the predecessor of the present Ohio Fuel Gas Company?

A. Yes.

Q. Have you any financial interests in any gas companies at this time?

A. Only as a stockholder.

Q. Are you a stockholder in what company?

A. In the Columbia Gas in a small way.

Q. Columbia Gas?

A. Yes.

Q. Which is the holding company of the Ohio Fuel Gas

3249

[fol. 439] Company?

A. Yes.

Q. Are you in any way personally interested in any leaseholds in Ohio?

A. Not at present only in one—well I have an interest carried for me by the Penn-Ohio, territory that I sold

them, and some acreage in Gallia County, Ohio, and I have a small interest in two or three wells, but very small.

Q. And have you had personal interests in leaseholds in the last two or three or four years?

A. Well, those are the leases that I am thinking about.

Q. In other words, you do buy and sell some on your own account aside from being a broker in leases; is that right?

A. Well, yes; I own and I lease and sell, and then I option and buy gas properties and put them together and sell them to investors.

Q. Have you ever testified before as an appraiser of leaseholds?

A. Yes, several times.

Q. In what cases?

A. I testified in the Logan Case and I believe I testified in other cases of the Ohio Fuel Company, Dayton Light & Power Company, and I have testified for the Iroquois Company and I think the East Ohio Gas Company.

3316

[fol. 440] E. E. Roth, called on behalf of The Columbus Gas & Fuel Company, being first duly sworn, testified as follows:

Examined by Mr. Turner:

Q. State your name?

A. E. E. Roth.

Q. What is your business, or profession, Mr. Roth?

A. Geologist.

Q. By whom are you employed?

A. The Columbia Engineering and Management Corporation.

Q. Where were you educated, Mr. Roth?

A. The University of Pittsburgh.

Q. What degrees have you?

A. I have a degree from that University Master of Science in Geology.

Q. Master of Science in Geology. What experience have you had in practical work?

A. Practically all my life I have been associated with either the oil or gas business.

3317

Q. With whom have you been associated?

A. My people are producers and have been in Pennsylvania and since going to school I have been associated with engineers and companies that do geological and engineering work. Mr. Ralph Davis employed me about 1921; I was with him six years and then came with the Columbia Corporation.

[fol. 441] EARL L. CARTER, called on behalf of The Columbus Gas & Fuel Company, being first duly sworn, testified as follows:

Examined by Mr. Turner:

4862

[fol. 442] Q. State your name and residence?

A. My name is Earl L. Carter. My residence is Indianapolis, Indiana.

Q. What is your business or profession?

A. I am a Consulting Engineer specializing in public utility rate investigations and other matters pertaining to utility problems.

Q. Where were you educated?

A. I had prep college at Marion Normal College, Marion, Indiana. I am a graduate of Purdue University with the Degree of Bachelor of Science, Electrical Engineer, and later with the degree of E. E. or Electrical Engineer.

Q. Now just give to the Commission your experience.

A. In the public utility field do you mean?

Q. Yes.

A. For a short time in the summer of 1913 I was connected with the Engineering Department of the Public Service Commission of Indiana.

From 1914 until the early part of 1917 I was connected with The Western Electric Company of Chicago in the Engineering Methods Department dealing with public utility equipment and particularly pertaining to telephone equipment.

From May, 1917, until May, 1918, I was a member of the engineering staff of the Public Service Commission of Indiana in the capacity of Acting Assistant Chief Engineer.

From May, 1918, until the latter part of November, 1918,

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[fol. 443] I was in the Army in Signal Corps work.

From December 1st, 1918, until January 1st, 1922, I was Assistant Chief Engineer of the Public Service Commission of Indiana.

From January 1st, 1922, until April 1st, 1928, I was Chief Engineer of the Indiana Commission.

Since April 1st, 1928, I have been in private practice dealing in public utility rate and investigations of various kinds.

Q. What experience have you had in making allocation data; over how many years?

A. I have been making allocation data of various kinds for the last 15 years.

[fol. 444] JOHN E. KELLEY, called as a witness on behalf of The Columbus Gas and Fuel Company, being first duly sworn, testified as follows:

Examined by Mr. Turner:

5078 and 5079

[fol. 445] Q. State your name, please?

A. John E. Kelley.

Q. Where do you live Mr. Kelley?

A. Carson City, Nevada.

Q. What is your occupation?

A. Engineer.

Q. Where is your office?

A. 17 Battery Place, New York.

Q. You are an engineer?

A. I am licensed to practice by the State of New York.

Q. Have you had any experience in purchasing gas lands in the state of West Virginia?

A. In the years 1929——

Q. You can answer that yes or no?

A. Yes, sir.

Q. Have you had experience purchasing gas lands elsewhere in the country?

A. Pennsylvania, Kentucky, Texas and Oklahoma.

Q. About how many acres of gas land have you purchased, Mr. Kelley, or leased?

A. Including leases in excess of 400,000.

Chairman Geiger: 400,000 acres?

The Witness: Yes.

Q. How many acres have you leased in the State of West Virginia?

A. Approximately 80,000.

[fol. 446] LEON J. PEPPERBERG, called on behalf of The Columbus Gas and Fuel Company, in rebuttal, being first duly sworn, testified as follows:

Examined by Mr. Turner:

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[fol. 447] Q. State your name, please.

A. Leon J. Pepperberg.

Q. Now, talk louder, Mr. Pepperberg, please. We have counter-noises that make it difficult to hear this morning. What is your occupation or profession?

A. Geologist.

Q. Where were you educated?

A. University of Nebraska.

Q. What degrees, if any, do you hold?

A. Bachelor of Arts, Master of Arts.

Q. What official positions, in connection with geology have you ever held?

A. I was member of the Nebraska Geological Survey from 1904 to '06, member of the field department of the United States Geological Survey, 1906 to '10. 1910 to '12, I was geologist for the Southern Pacific Company in San Francisco, I was working out of San Francisco. 1912 to '17, I was consultant in San Francisco, working out of there. '17 to '19, I was geologist and manager for C. J. Wrightson of Tulsa, and New York, and in 1928, I had a consulting office in Dallas, Texas. Part of '27, but since '28, I have been with the Columbia system.

Commissioner Geiger: You are now with the Columbia Gas & Electric?

The Witness: Engineering and management.

Commissioner Geiger: Oh, Columbia Engineering and Management.

[fol. 448] THOMAS R. WEYMOUTH, called on behalf of The Columbus Gas and Fuel Company, in rebuttal, being first duly sworn, testified as follows:

Examined by Mr. Turner:

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[fol. 449] Q. What is your name, please?

A. Thomas R. Weymouth.

Q. Where do you reside, Mr. Weymouth?

A. In Greenwich, Connecticut.

Q. What is your occupation?

A. I am Vice President of the Columbia Engineering & Management Corporation.

Q. What is your profession?

A. I am an engineer by profession.

Q. Where were you educated?

A. At the Massachusetts Institute of Technology.

Q. What degrees have you?

A. I have a degree of Bachelor of Science in electrical engineering.

Q. What experience have you had in public utility work?

A. I have been engaged in public utility work continuously since 1903.

Q. What experience have you had in the natural gas industry?

A. The same period. I have been in the natural gas business since 1903.

Q. Outline the high spots of your experience in the natural gas industry.

A. In 1903 I became assistant to the chief engineer of the National Transit Company in Oil City, Pennsylvania, hav-

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[fol. 450] ing charge of their engineering work in connection with natural gas and oil transportation. In 1911, I became Chief Engineer of the United Natural Gas Company and its affiliated companies. In 1923, I became the president of the Iroquois Gas Corporation in Buffalo, New York. In 1928, I became president of the Oklahoma Natural Gas Corporation in Oklahoma. In 1930, that is just a year ago, I took my present position.

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[fol. 451] HARRY R. ALLENSWORTH, called on behalf of the City of Columbus, being first duly sworn, testified as follows:

Examined by Mr. Huffman:

Q. Will you state your name, please?

A. Harry R. Allensworth.

Q. Mr. Allensworth, what is your profession?

A. Professional engineer; ordinarily designated consulting engineer.

Q. Will you please state your experience and qualifications in your profession?

A. I have a technical education in mechanical and electrical engineering. I am a member of the American Institute of Electrical Engineers, the Western Society of Engineers. I am a registered professional engineer.

For the past 29 years, in fact since 1902, I have been in responsible charge of engineering work. For the past 17 years, since 1914 in fact I have specialized in public utility economics, devoting most of my time to public utility appraisals and rate proceedings. I have had experience in public utility finance, accounting, management and operating problems.

In 1914 and for some years subsequent thereto I was 3403

[fol. 452] valuation engineer for the Ohio State Telephone Company, having full charge and responsibility for all valuations made by and for that company. While employed by The Ohio State Telephone Company I was called to the property of The Columbus Railway, Power & Light Company and divided my time between those two properties, and for The Columbus Railway, Power & Light Company I was consultant on valuation work and a specialist in economic studies; that is, studies having to do with the relation between engineering and management and finance.

While engaged upon these two pieces of work I was called to the State of Minnesota where I was placed in full charge of valuation of the telephone property in the State of Minnesota for the Tri-State Telephone and Telegraph Company. In this work I had full charge of and responsibility for the appraisal of all of the telephone property of said company in the State of Minnesota, the northwestern part of Wisconsin, the eastern part of North Dakota and the eastern part of South Dakota. While this work was in progress I was also placed in full charge of and responsibility for the valuation of these properties for purchase and sale between the Independent telephone interests and the Bell interests.

Also, while engaged in this work as recounted for the past 17 years, I was called in on other matters as consulting engineer.

Incidentally, while employed as stated, I served the State Civil Service Commission of Ohio as expert examiner, conducting examinations to determine the fitness of applicants for positions requiring technical training. I also served the City of Cincinnati as expert examiner for its Civl Service

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Commission.

[fol. 453] In 1916 I was examined by the State Civil Service Commission of Ohio for the position of Chief Engineer of the Public Utilities Commission of Ohio. I passed that examination successfully and was certified for appointment to that position.

In addition to public utility work as recited, I have made appraisals of industrial enterprises. During the years 1924, 1925, 1926 and 1927 I served the City Council of Columbus, Ohio, as consulting engineer in the matter of fixing rates to be charged for natural gas in the City of Columbus.

In 1927 I was retained by the Attorney General of the State of Ohio as consulting engineer on The Ohio Bell Telephone Company company-wide rate case and am still serving under the present Attorney General in that capacity.

In 1928 I appeared before this Commission as consulting engineer in behalf of protesting municipalities in the Logan Gas case.

In 1929 I appeared before the City Council of Cincinnati as consulting engineer in behalf of the communities of Delhi, Saylor Park, Fernbank and others in the matter of extending street car service along the lower river road to Fernbank.

I was retained by the Columbus, Ohio, City Council as consulting engineer to prepare a report on The Columbus, Railway, Power & Light Company, both its electric light and power and street railway divisions.

I was retained by the City of Lima as consulting engineer in the matter of gas rates, which cause was heard by this Commission.

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[fol. 454] I was retained by the Village of New Bremen in the matter of telephone rates, which cause was heard by this Commission.

I was retained by the Cities of Wooster, Millersburg, Orrville and Holmes County in the matter of telephone rates, which cause was heard by this Commission.

I was retained as consulting engineer by the City of Delaware in the matter of telephone rates, which cause was heard by this Commission.

In 1930 I was retained by the Cleveland, Ohio, City Council and the Director of Law of the City of Cleveland as consulting engineer to submit a report on The East Ohio Gas Company's natural gas operations in the City of Cleveland. This inquiry consumed more than a year's time and involved an investigation into the operations of both The East Ohio Gas Company and The Hope Natural Gas Company, and also inquiry into the ownership of these two companies by The Standard Oil Company (New Jersey).

The East Ohio Gas Company distributed natural gas in 49 communities in eastern and northeastern Ohio and it also distributes manufactured or mixed gas in ten communities in northeastern Ohio. It produces gas in Ohio and in addition thereto purchases large quantities of gas from The Hope Natural Gas Company at the Ohio River. This circumstance required the definite allocation of The East Ohio Gas Company's property to Cleveland natural gas operations. It likewise required the allocation of operating charges and other expenses to natural gas operations within the City of Cleveland. These allocations were successfully made, not only with the consent of The East Ohio Com-

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[fol. 455] pany but with its co-operation, which resulted in signed agreements on the part of an engineer representative of The East Ohio Company and myself as consulting engineer representative of the City of Cleveland, which signed agreements definitely fixed the allocations of property, operating charges and other expenses.

Q. Are you still retained by the City of Cleveland?

A. I am, yes, sir.

Q. Mr. Allensworth, have you been engaged by the City of Columbus in the present rate case of The Columbus Gas & Fuel Company against the City of Columbus before this Commission?

A. I am so employed, yes, sir.

Q. In the statement of your experience you have referred to previous experience in appraising and evaluating the

properties of The Columbus Gas & Fuel Company; when was that?

A. That was in the years 1924 and 1925, 1926 and 1927, in which work I made a study and appraisal of the properties of this company, that is, The Columbus Gas & Fuel Company, in the 1925 case before the Master in the Federal Court.

3652

[fol. 456] Q. Are you a Certified Public Accountant, Mr. Allensworth?

A. No, sir.

Q. Have you ever managed a utility?

A. No, sir.

Q. Were you ever in the employ of a gas company?

A. No, sir.

Mr. Turner: That is enough.

3711

[fol. 457] By Mr. Huffman:

Q. Mr. Allensworth, counsel for the Company asked you heretofore in the record if you were a certified public accountant. As I recall it, you answered him in the negative. Now, are you an accountant?

A. Yes, sir.

Q. Have you qualified before any Court or Commission as an accountant?

A. Yes, sir.

Mr. Turner: Qualified before a Court?

The Witness: Before the Federal Court in this district and before the Minnesota Railroad and Warehouse Commission.

By Mr. Huffman:

Q. I take it, then, you consider yourself an engineer accountant?

A. I am what sometimes is designated as an engineer accountant, or an accountant statistician.

3654

[fol. 458] Commissioner Geiger: The opinion of the Commission is that he has qualified himself to a sufficient extent to permit him to give his opinion and that the matter of his qualification will go to the weight to be given to that opinion. You may ask the question.

[fol. 459] Mr. Allensworth testified on cross-examination:

3932

[fol. 460] Q. I am still asking you now, then, to bring in your break-up of your tool allowance to find out what is in there.

A. Well, that I will not do because I did not make my appraisal that way.

Q. Well, tell us—let us go a little further with it—tell us something else that is in the tool allowance.

A. The picks and shovels and bars and barricades and lanterns, etcetera, tripods for lowering the pipe into the trench.

Q. Any other machinery in there like this compressor?

A. Yes, sir; I would have to refresh my memory on those details, but I think that we provided in there a truck or two.

Q. A truck or two; in tool expense?

A. Yes, sir.

Q. What kind of trucks?

A. A light truck.

Q. Well, was it one or two?

A. A Ford car.

Q. For what purpose?

A. General purpose—running around.

Q. Do you mean a passenger car or a Ford truck?

A. Well, it would be both.

Q. Well, I will have to ask a request that we have a

3933

[fol. 461] break-up of this tool expense.

A. Well, I didn't build my appraisal that way and you are asking for something that is not in my appraisal. That is something in a different form than what it is in my appraisal.

Q. Well, we want the break-down of your tool expense, that is all; I know it is not in the appraisal and it is not anything that has been furnished to us, but I am asking you to put it in. Now, Mr. Allensworth, I want to refer to page 3509 of the record in this case and ask you the source or the basis upon which you stated that the "Manual performance, upon which my unit costs are erected, is three cubic yards per man day of nine hours."

A. That is my personal experience and observation mostly in Columbus over a period of more than 30 years.

It is strengthened—that is, my opinion is strengthened by current observations from time to time and constant study of such matters.

Q. All right. Now, we want first the personal experience.

A. Well, I have opened trenches, I think, in every part of the City of Columbus; that is, I had manual labor directly under me that opened trenches.

Q. In every part of the city; now, give us some specific locations.

A. Well, I have had trenches opened on High Street; I had a trench opened diagonally across Broad and High; I have done trenching in this city as far north as Olentangy Park, which at that time was the corporation limits of the city.

Q. Do you mean as far north—you mean you did some trenching up there?

A. I did trenching up there in that section.

Q. How much in that section or at that point?

A. Oh, I don't remember.

3934

[fol. 462] Q. Can you find out?

A. No; that was a trench—a short trench from High Street east.

Q. How far east?

A. Oh, half a block, maybe.

Q. I will ask you this other place you said; High Street and 11th Avenue, did I understand that?

A. No, I didn't say anything about High Street and 11th Avenue.

Q. High Street and some Avenue, I didn't catch which one.

A. I didn't say any Avenue.

Q. All right; where else now?

A. Well, I have excavated trenches in the east side and the west side and the south side.

Q. Well, all right, take the east side first and tell us where and how much.

A. Well, on the east side.

Q. Well, where on the East side is what I asked for.

A. Well, Third Street is east if you consider it so.

Q. How much on Third Street?

A. And Parsons Avenue is east.

Q. Let us have the amounts as we go along; how much in Third Street?

A. A city block, I should say.

Q. All right; your next one.

A. This work was all incident to the installation of electric conduits and all jobs were, as far as yardage was concerned, small jobs.

Q. Well, go ahead, we want them; Third Street you mentioned, I think; where else?

A. I excavated east of Parsons and south of Broad and in the south end.

Q. Just a minute, the question calls not only for the location but the amount.

A. Well, I can't tell you the amount. If that is important I will stop right now.

Q. Approximate; it is very important; you are basing your judgment of this performance on it.

A. I have not the kind of a mind that can remember the 3935

[fol. 463] cubical contents of a trench 20 years after I make the excavation—or more than 20 years, perhaps.

Q. Well, can you name any more of these locations on the east side?

A. On the south side——

Q. On the east side, I said.

A. Yes; Long Street; East Long Street at various points and in the south end.

Q. Well, you cannot give the amount on East Long Street?

A. No, sir.

Q. Was it as much as a city block?

A. Oh, altogether it is more than that.

Q. Well, how much more; give us an approximate idea.

A. I cannot say that. I have excavated at different points, and I excavated in the south end. By that I mean I had excavations opened directly under my supervision.

Q. What do you mean by "An excavation opened?"

A. By digging out the dirt and throwing it out.

Q. You mean you opened a trench in the ground?

A. Yes, sir.

Q. You don't mean you were opening one that had been there before?

A. No.

Q. Well, all right; in the south end, tell us where.

A. South High Street; alleys east and west from South High Street at different points and I won't attempt to remember them.

Q. Can you give us any approximation of them?

A. No.

Q. Comparable with the other jobs; bigger or smaller?

A. They are all of the same nature.

Q. All small?

A. As figured in lineal feet of trench, yes, they would be considered small jobs.

3936

[fol. 464] Q. If you figured the lineral feet of trench to be small, then the amount of excavation would be small, too, wouldn't it?

A. Yes, sir, I have already said so.

Q. Now the west side; do you want to give us any place over there?

A. Well, there is a number of places over there; West Broad Street and in both directions; I can't remember them.

Q. You say out on West Broad?

A. I think as far west as I excavated would be about Central Avenue.

Q. How much did you excavate around Central Avenue?

A. I don't know that I excavated any around Central Avenue.

Q. You said about Central Avenue.

A. No, I didn't say anything of the kind.

Q. All right, now name us a place where you did excavate.

A. I made excavations probably as far west as Central Avenue. I didn't say I made an excavation at Central Avenue.

Q. Well, tell us the next one this side, the next street this side.

A. I don't know as I put one in there.

Q. Well, how far do you want to go, then?

A. That would be Brehl Avenue; I made excavations through West Broad Street and north and south from there and probably as far west as Central Avenue.

Q. How much?

A. I don't know how much.

Q. Comparable with these others?

A. Yes, sir.

Q. Now, we have covered north, east, south and west, haven't we?

A. I think so.

Q. And you cannot think of any others that you haven't mentioned?

A. No; I might if I was to struggle hard enough but I don't think it is necessary.

3938

[fol. 465] Q. Mr. Allensworth, just before the luncheon adjournment I had inquired about the statement at 3509 of the record and which appears at page 40 of your city exhibit 66, with reference to the three cubic yards per man per day. I want to ask now whether your answer as to the source of that performance applies to the performance of laying and jointing and the gang set-up appearing on page 44 of city's Exhibit 66?

A. I do not think that it applies entirely. I beg your pardon for permission——

Q. Possibly the question is not clear.

A. I understand the question.

Commissioner Geiger: Gentlemen, you are conversing with each other and not with the Commission. Speak up so that we can get it.

The Witness: I was about to ask the permission of counsel——

Commissioner Geiger: Just answer the question. Say you cannot answer it——

The Witness: I have answered it.

Commissioner Geiger: That is enough. Go ahead and ask another one.

3939

[fol. 466] The Witness: May I not be permitted——

Commissioner Geiger: You are on cross examination.

Q. Well, what is the source then of the gang set-up and performance set out on page 44 of city's Exhibit 66?

Commissioner Geiger: Of what exhibit?

Mr. Galland: City's Exhibit 66, page 44.

A. That particular page is the result of engineering studies that I have made during the years and information

that I have as an engineer as to pipe laying performance of cast iron pipe. Personally I have never laid cast iron pipe in the ground.

Q. How about page 45?

A. Well, the answer that I gave you applies to all the cast iron pipe.

Q. All cast iron pipe? That would take us up to and include page 48, wouldn't it?

A. Yes.

Q. Now, what was the source of the gang set-up and performance in wrought iron and wrought steel pipe, set up on page 49 of Exhibit 66, City's Exhibit 66.

A. That is primarily studies, engineering studies, that I have made during the years and engineering information that I have gathered during the year as to laying performance, and in addition to that my own personal experience in a small way, of course, as to laying threaded and coupling pipe.

Q. The same answer applies, I assume, to the gang set-ups and performances up to and including page 56.

A. For all wrought iron and steel pipe, yes, sir, to and including page 56.

Q. What handbook may we find these figures in?

Q. These figures on the pages that I have just inquired about?

A. I don't know that you can find them in any hand book.

3940

[fol. 467] Q. You never found them in any hand book, did you?

A. These figures?

Q. Yes.

A. No, sir.

Q. Would it be mere coincidence, or what, if we should find these figures and results in a hand book?

A. I would be surprised if you would find my figures and results in a handbook. I suspect that you may find something approaching it. I don't know whether you will or not.

Q. Would it be mere coincidence if we did find these figures and results in a hand book?

A. I don't understand what you mean by a coincidence. That would indicate that some other engineer had arrived at the same results that I had.

Q. Are you familiar with the publication known as the Le Fax publication?

A. Yes, sir.

Mr. Butler: A little louder. We just can't quite get it.

The Witness: Yes, sir.

Q. You have used that publication in your work, I believe?

A. I don't know that I have used it. I have it in my possession and have referred to it from time to time.

Q. You referred to it during your testimony in the Federal case which has been referred to here, that case which we have spoken about a number of times here?

A. I don't remember whether I did or not. I perhaps did.

Q. Directing your attention to page 3148 of that record, didn't you make this answer in the Federal Court as near as you can now recall?

"A. Oh yes, I think so. I think I have one. I have it before me, a life table which is issued by the Le Fax Corporation.

"Q. Just a loose leaf hand book service, just specializing 3941

[fol. 468] in engineering data.

"A. A life table?"

Q. Yes.

A. If you say that is in the record. I don't remember at this late date. But that apparently is referring to a life table.

Q. What does the Le Fax publication contain generally speaking?

A. The data that I have, published by the Le Fax Corporation, is a digest of statistical nature that goes through the realm of engineering, civil engineering, water works engineering, sanitary engineering, road work, electrical engineering. There are many thousands of pages, if I remember right. I have not looked at it for several years, but if I remember right——

Q. You haven't it with you, have you?

A. Certainly not.

Q. Will you examine and tell us whether it contains this statement on a page which is numbered 8-307, whether you

find this statement, "It was decided that under average conditions a man would trench and backfill nine cubic feet of trench per man day, and that the cost of trenching would equal twice the cost of backfilling"; will you say whether you find that statement?

A. If you are reading that from a copy of that page of Le Fax service, why I admit it. I will admit it may be in there, if you have a true copy of that page.

Q. I think I have, but I want you to check it if you care to.

A. I don't care to. I will take your word for it.

Commissioner Geiger: I think it will be conceded if you have a page referring to it that that is what it says on that page.

The Witness: But may I add that my labor performance of nine cubic feet per man day does not come from that source?

3942

[fol. 469] Q. But it is the same, isn't it?

A. It apparently is from what you read, yes.

Commissioner Geiger: What is your labor performance?

The Witness: Nine cubic hours per man day for a day of nine hours.

Commissioner Geiger: That is the same as the statement that he just read?

The Witness: I do not know whether that is a nine hour day or what it is.

By Mr. Calland:

Q. Now, will you look at page 44 on city's Exhibit 66? I would like to have you investigate this same page of the Le Fax publications and tell us whether or not the gang set-up appearing on page 44 is not identical with the table for laying pipe set-up on page 8-307 and the table for jointing pipe on the following page?

A. It may be. If you say it is, I will admit it. Why look at it? Let me look at your page. I will check it right here. Why should I look that up?

Mr. Calland: May we have this marked for identification as company's Exhibit No. 157 A, B, C, and D?

And thereupon the paper writings above referred to were marked for the purposes of identification as company's Exhibits Nos. 157-A, 157-B, 157-C and 157-D.

(Question read.)

A. No, it is the same excepting as to the number of men.

Q. What are the differences?

A. The table that you were referring to includes a fore-
3943

[fol. 470] man. My set-up is what I designate or what is known to the trade as a straw boss or a working foreman.

Q. Same number of men though?

A. Same number.

Q. Three men for laying and——

A. The same number of men appear here, yes, sir.

Q. Yes, you take the number of feet of pipe laid per hour as given in the table on this first page of the Le Fax publication which I have handed you, the number of feet of pipe per man hour on that page for laying, then take the same information as revealed by that table as to jointing and put them together, and tell us whether you do not get 411 feet per day, which is your performance on page 44, Exhibit 66.

A. If I understand your question, I do not think I can make that calculation on the witness stand. I would be glad to work it out for you and then answer it.

Q. Will you tell that as to each size of pipe in cast iron and as to each size of pipe in steel screw pipe, and report to us what results you find?

A. Yes, I would be glad to.

Commissioner Geiger: Mr. Allensworth, may I ask you whether or not in computing your labor performance you get it out of these tables?

The Witness: No, I did not.

Commissioner Geiger: Or anything from which these tables are copied?

The Witness: I don't know what——

Commissioner Geiger: Did you know of the existence of these tables?

The Witness: Yes, sir.
3944

[fol. 471] Commissioner Geiger: Did you use them?

The Witness: No, I don't remember that I did.

Mr. Turner: All we want to do is to know that every item in his appraisal is identical.

Commissioner Geiger: The only thing is what are you wishing to do? To support him in his appraisal or to contradict him in his statement?

Mr. Turner: Contradict him.

Commissioner Geiger: All right, let him do it.

Mr. Turner: It is awfully embarrassing and handicapping to have to explain to the witness the purpose of it.

Commissioner Geiger: Oh, let's go along. We are not a lot of children on this thing.

Mr. Turner: I don't think you ought to be. I want to see what you are driving at——

Commissioner Geiger: Now, he has committed himself that he did not use that table.

Mr. Turner: Well, we are going right down now and introduce the tables.

Commissioner Geiger: Why ask him for something tomorrow?

Mr. Calland: He said he could not on the witness stand make this computation, and I asked him to make it and bring it in.

Commissioner Geiger: All right, go ahead. All right, gentlemen, let us proceed.

A. At page 44 of your city Exhibit 66, you set up a crew for the laying and jointing of six inch cast iron pipe. I wish you would describe the operation of laying and jointing cast iron pipe?

A. Do I understand that question, the process of laying

3945

[fol. 472] cast iron pipe?

Q. Yes, what they do.

A. Pipe is delivered along the line of the trench. It is taken from the side of the trench, rolled over into position and placed into slings, supported by tripods, is lowered into the trench. It is lined up with the preceding joint by blocks or otherwise as may be necessary. The spigot end is placed in the bell, and around the spigot end is laid a caulking dam, a lead dam, so to speak, and after the joint is rammed to keep the lead from running back into the pipe, then the lead dam is put outside of the bell on the spigot end and melted. Lead is run in. After the lead solidifies, the caulker severs the projecting lead

with a caulking iron, beat with a hammer, and drives it into place, and any excess lead is trimmed off in the operation.

Q. This performance has to be done by six men?

A. Yes, that is a unit of six men.

Q. What part of the work does your straw boss do?

A. Why, he works with the other men on all of it with the exception of caulking.

Q. Now, at pages 49 to 52 you set up gangs for the laying of wrought iron and wrought steel pipe. Now, explain the operation of laying and jointing wrought iron and steel pipe, beginning with say six inch pipe?

A. The pipe is delivered to the side of the trench. It is rolled to the trench and put in slings—you are confining me now to ~~six~~ inch pipe, are you?

Q. Yes, make it as to a six inch pipe.

A. Put into slings and lowered into the trench. The coupling is on the previous length. The pipe is lined up in the trench. Tongs are put on it and it is turned in the 3946

[fol. 473] trench and the pipe is run into the coupling.

Q. Now, what part of the work does the straw boss do here?

A. He works on any part of it. He is a working foreman.

Q. What part of the work do your two layers do?

A. They handle the pipe.

Q. What do the two jointers do?

A. They run couplings off and on and start the pipe into the couplings, start the threaded end into the coupling.

Commissioner Geiger: Just let me get a little better picture out of that. Are these couplings reverse screws? What do you turn, the pipe or the coupling?

The Witness: You turn the pipe into the coupling.

Commissioner Geiger: You have to turn the pipe?

The Witness: Yes, sir.

Commissioner Geiger: You don't do it by turning the coupling alone?

The Witness: No, you tighten all couplings on one end and turn the coupling by itself, but the threads are all right-hand threads, so that when you start pipe in one end of the

coupling, the other end being on the other length, when you tighten this up, you tighten up both.

Q. This is done with tongs?

A. Yes.

Q. Who handles the tongs?

A. The whole gang if necessary.

Q. If necessary? I am asking you about this five man gang here laying this pipe. I want you to describe what they do. I don't see any tong. I wanted to know who does that.

A. The two layers would start the tongs.

Q. Who finishes them?

A. They would probably finish them. On a six inch pipe?

3947

[fol. 474] Q. Yes.

A. With a tong about six feet long.

Q. Yes.

A. I pulled up three inch pipe myself with a tong three feet long, pulled it right up. It might be that they would need some help on the tong. If they do, the foreman helps them out. Anybody helps them out. The gang puts in the pipe, that is, this working foreman.

Q. If necessary they all lay and they all joint; they all do this, that or the other; is that right?

A. The two jointers so to speak are the two men who have a little more experience, who start the threads, start in the couplings.

Q. They don't do any of that, do they?

A. They have.

Q. Did you ever see them do it?

A. I wouldn't say excepting in my own work, which is a very small amount.

Q. This pipe has to be cleaned, doesn't it, before it is put down?

A. What do you mean, cleaned?

Q. Cleaned?

A. Brush the outside of it off?

Q. The inside and outside both.

A. The pipe of six inches would be delivered to the thread protector to protect the threads on the end of the pipe; running them off, the threads are cleaned.

Q. Someone has to take them off each time?

A. Yes, sir.
Q. Do you know what a back-up man is?
A. Yes.
Q. What does he do?
A. He works on the pipe and on the coupling.
Q. Where does he work when they are putting this pipe together?
A. He works in the trench.
Q. With reference to the rest of the men where he is?
A. He works in the trench.
Q. Where is he? With these other men, with reference to where these joints are screwed together? What does he do?

3949

[fol. 475] A. He might be both places.
Q. What does he do? Where is he?
A. You are asking about a backup man. I organized these crews as jointers.
Q. You don't have a backup man?
A. He might be backing up—he might be on the front end of the pipe and he might be on the coupling end of it.
Q. Do you put anything on these pipes before you screw them together?
A. Yes.
Q. Where is the dope man in your set-up?
A. He is a jointer.
Q. When does he put it on?
A. It depends on who is handling the job and it depends on conditions for which the pipe is being laid. I think it is practical mostly to put the dope on on top of the ground. Sometimes it is put on when it gets in the trench.
Q. Would you have the pipe ready to go down in the ditch before you put the dope on?
A. Should have, yes.
Q. You mean by that it would be all ready to go down and you are just waiting for the dope to go on?
A. I should think so.
Q. After you put the pipe over the trench you would then wait while the dope man puts it on?
A. Not necessarily.
Q. I just want to know which one of these five men is going to do the doping of these pipes.

A. You are attaching a lot of importance to the doping. That is averaged in the performance of the five men in my set-up.

Q. But which of these men is going to do it?

A. The doping is ordinarily considered kind of a laborer's job and depends on the way the pipe is running. You

3950

[fol. 476] have a working foreman here. It is his job to keep the crew going. He might dope a few joints. The laborers might carry the dope pot.

Q. You are talking about six inch pipe?

A. Yes, I am talking about six inch pipe, but the first page refers to smaller pipe also.

Q. Six inch and smaller. Now, as you turn over to eight inch pipe and proceed through the various sizes, you add two additional layers and one additional jointer for each increase of two inches in the size of the pipe?

A. I suspect that may be true.

Q. What do these two additional men do?

A. They work on the pipe, like the rest of them.

Q. Why are they needed?

A. Because the pipe gets heavier.

Q. It is to lay the pipe and lift it?

A. No, it requires more men to turn the pipe. It requires more men to handle the pipe.

Q. Of course, less lifting, moving and handling the pipe——

A. Do you think that the way you conceive a crew, they are going to pick up a twelve or a sixteen inch pipe and carry it?

Q. I am asking you.

(No reply.)

Q. Now, have you made any computation of the weight of these joints of pipe in these various sizes?

A. No, I think that would be kind of a foolish thing to do.

Q. It may be foolish, but will you tell us what the weights per joint are?

A. Oh, I can tell that. You asked me if I computed it.

Q. Computed it or got it from this source?

A. That is recognized authentic information, and it is

3951

[fol. 477] published in all pipe manufacturers' trade catalogues. I never computed the weight of these pipes.

Q. Have you the information?

A. I will say, yes, sir.

Q. What does a joint of sixteen inch wrought iron plain end pipe weigh?

A. 65.98 pounds per foot.

Q. How much per joint, I asked?

A. I don't know.

Q. How long are they?

A. Pardon me. Per average length that would run about 1331.96 pounds.

Q. What does a joint of sixteen inch cast iron pipe weigh per joint?

A. 1350.96 pounds.

Q. What does a twenty inch cast iron pipe weigh per joint?

A. 1845.96 pounds.

Q. 24 inch?

A. Cast iron you say?

Q. Cast iron.

A. 2476.92 pounds. That is what you are referring to?

Q. What is the weight of twelve inch iron and steel screw pipe per joint?

A. 909 pounds.

Q. What is the jackboard on a pipe operation of laying screw pipe?

A. A jackboard?

Q. Yes.

A. I don't recognize it by that name. You will have to describe it to me.

Q. I am just asking you if you know what it is. If you do not, that is all.

A. I don't recognize it by that name.

Q. What is the growler board?

A. That is a foreign language to me. I don't know.

Q. I thought so. Did you ever hear of a pipe horse in connection with this laying of screw pipe?

A. Yes.

Q. What is that?

A. I suspect that what you are calling a pipe horse is what I call a tripod.

3952

[fol. 478] Q. Do you call in your set-up for cast iron pipe—do you refer to pipe men?

A. Yes.

Q. What are they?

A. A pipe man is a man that works on the pipe.

Q. Did you ever hear them called that in operations around Columbus?

A. No, I don't think I have.

Q. You found that term in this Le Fax publication?

A. That is possible.

Mr. Turner: It is probable, too.

The Witness: To be very frank, I don't know where I picked up that term.

Mr. Calland: Neither do we.

Mr. Turner: Oh, I think we do.

Mr. Calland: Outside of this table.

Commissioner Bricker: Are you going to leave the judge in the dark as to a growler board?

Mr. Butler: Yes, that may be the turning point in this case.

Mr. Turner: Well, we are getting something now outside of these Le Fax hand books.

Mr. Huffman: How many handbooks do you have in your library?

Mr. Turner: We got this out of the former case, out of the case that Mr. Allensworth said was his authority. That is where we got this one.

Mr. Butler: Well, talk now, because it may be the only real chance you have.

Mr. Turner: We will identify it even down to pipe men and all the terms.

3953

[fol. 479] The Witness: I think the term pipe men comes —I think that that is a word that is used in water works construction more or less.

3953

[fol. 480] Q. Now, I want to ask you about plain end pipe, Mr. Allensworth. You have a set-up for plain end pipe beginning at page 53 and running through the various sizes of pipe up to and including page 56. Tell us how plain end pipe is put together.

A. Plain end pipe is delivered to the side of the trench. The patent coupling is put in the trench, put on one end. The new end is lowered, lined up and inserted, and when

it is in proper position, the coupling is clamped by drawing down the bolts on the clamp.

Q. Is that all of it?

A. You asked me how it is laid.

Q. I mean, have you told all that is necessary in laying plain end pipe?

A. That is the way plain end pipe is laid.

Commissioner Geiger: Now Mr. Allensworth, do I understand that the plain end pipe is a pipe that has neither bell nor screw threads on it; is that correct?

The Witness: It has neither.

Commissioner Geiger: How do they fasten them?

The Witness: A patent coupling—the patents may have expired now—but a coupling made in such form as when it is put around the pipe and screw bolts are put through and screwed up, it clamps down on the pipe.

Commissioner Geiger: Makes a solid coupling without screw?

The Witness: Yes.

Commissioner Bricker: Why do you never have a screw coupling on cast iron pipe?

3954

[fol. 481] The Witness: They do manufacture cast iron pipe with screw couplings, but that type of pipe has never come into very general use. It is recommended by some gas iron pipe manufacturers. I suspect that the reason that it does not find more use is the fact that the threads from the cast iron pipe must be so large, that is, the pitch of the thread must be so great, and being cast iron, that the screwing of pipe into the coupling does not make a tight joint, as tight as it obtained with the smaller threads on the steel pipe, and the longer thread in proportion to the pitch of the pipe.

Commissioner Bricker: Then it could be worked out so that you could make a non-leaking joint with a practically limitless life?

The Witness: I doubt that, Your Honor.

Commissioner Geiger: Can a thread be cast?

The Witness: Oh, it is possible, yes, to cast a thread, Your Honor, but I wouldn't say you can cast a thread that would make a tight joint.

Commissioner Bricker: Now, Mr. Allensworth, looking after question so as to try to get this clear in my mind.

Suppose you were using a pipe that was threaded, a collar joint—we will call it that—but the intersection of streets or some other condition required you to cut that pipe, so that you would have to cut off the threaded portion, would you then use this patent collar you are speaking about.

The Witness: No, the foreman would send a requisition back to the shop that he wanted a piece of pipe cut to that particular length.

Commissioner Geiger: It would then have to be re- 3955

[fol. 482] threaded at the shop?

The Witness: Yes.

Q. How are the ends of this plain end pipe fastened together?

A. With a coupling.

Q. What kind of a coupling? How is it coupled?

Commissioner Geiger: He has described that. He says bolts are put on and bolted right down.

Mr. Turner: But we have men back here, as good men as Strickler, who say that that is not it.

Commissioner Geiger: Well, let him come on.

Mr. Turner: We are trying to get it out of this man.

Commissioner Geiger: He has already stated it. I got it fifteen minutes ago.

Mr. Turner: We haven't gotten it yet. We will have to apologize for being dumb.

Mr. Butler: You are not to blame for that.

Mr. Turner: Not for being dumb, no.

The Witness: That consists of a sleeve, two rings and bolts.

By Mr. Calland:

Q. Somebody has to put them together, don't they?

A. They come assembled.

Q. They do come assembled but they have to be put together when you get them on the part, don't they?

A. Oh yes, I can bring a picture of couplings in tomorrow morning if you wish to see them.

Q. There are rubbers in these joints?

A. Rubber gaskets or some other form of gaskets.

Q. Are they assembled with them?

A. No, they are shipped with them, but they don't come in the couplings.

3956

[fol. 483] Q. Now, tell us how, when your gang is going to do the necessary wrenching work to put this pipe together, they do it; it has to be screwed with wrenches?

A. The tightening of the bolts?

Q. Yes.

A. The men that I have designated jointers——

Q. The jointers do whatever is to be done regardless of what it is?

A. Yes, sir, they would if they were working for me.

Q. Who does the stabbing?

A. The jointers.

Q. Tell us what a stabber is and what his function is.

A. A stabber, according to the gas company, is a man that is a very rare individual and very hard to find, what he does when this pipe is in the trench, he lines up the pipe and levels it with blocks or otherwise, so that the thread on the pipe will register with the thread on the coupling. It is not much more than a high class laborer's job.

Q. You will have one of these 40 cents an hour laborers do that, will you?

A. No.

Q. Which one will you have do that?

A. Oh yes, I have rated them 40 cents.

Q. These joints or couplings get pretty heavy when you get in big sized pipe, don't they?

A. Yes.

Q. Who handles them?

A. They would be lowered with a gear from one of the derricks so-called or tripods, which ever you want to call it.

Q. And then naturally fall in place, I suppose, would they?

A. No, not quite that, but they would be lowered into position.

Q. Does one of your men here that is going to handle the operation, holding it there——

A. What do you refer to?

3957

[fol. 484] Q. This coupling.

A. Which men or what coupling?

Q. These men of your crew that are going to handle this pipe.

A. What crew are you talking about?

Mr. Davies: What size pipe?

Q. Take this page here.

A. A six inch coupling?

Q. All right, I will agree with you on a six inch coupling. But let's take one over here with a twelve or a sixteen inch.

Commissioner Geiger: What page?

Mr. Calland: Page 56.

The Witness: I have five men there.

Q. What does it weigh per joint, this pipe?

A. Why a length of that pipe weighs 1319.6 pounds.

Q. What is that? Twelve inch?

A. No, I was referring to sixteen.

Q. All right. These joints in plain end pipe have to be inspected.

A. What do you mean, joints? Couplings?

Q. Couplings, if you would rather call them that.

A. Naturally they would be inspected.

Q. Who does that in your gang?

A. The foreman is responsible for the equipment.

Q. That is, the straw boss?

A. Yes.

Commissioner Geiger: What is the difference between inspecting and testing?

Mr. Calland: I am coming to that in a minute.

Commissioner Geiger: All right.

Mr. Calland: Answering Your Honor's question, the inspection I was talking about was the inspection of the joint. Now, I am coming to the question of testing.

3958

[fol. 485] Q. All these kinds of pipe have to be tested after they are laid?

A. No.

Q. All right. Which ones do not? Did you understand the question?

A. Yes, I understood it.

Q. That there are some of these kinds of pipe that do not have to be tested?

A. No, not some kinds. You said some pipe.

Mr. Galland: Read the question.

(Question read.)

A. Kinds, yes. I misunderstood you. I thought you said pipes.

Q. What is the method of testing?

A. The method is to block the end of a day's run, pump air into it and have a laborer go down the trench with a bucket of soapsuds and soap the joints, and if there is any air escaping, it will make bubbles and that joint would have to be tightened.

Q. And the pressure comes from where?

A. Air compressor.

Q. Where is the air compressor in your set-up for that work?

A. It is in my allowance for tools and equipment.

Q. You are going to break up that tool allowance, are you Mr. Allensworth?

A. No, sir.

Q. Then I want to know how much you allowed in it for the compressor?

A. The amount that would be necessarily to equip the gangs with air compressors.

Q. How much? Dollars or percentage, either way you want to give it?

A. I have told you I did not make up my appraisal that way. I have submitted in the record the total amount that I provided for the use of such equipment.

Q. Can you break it up?

3959

[fol. 486] A. Well, I don't make my appraisal that way and this is my appraisal.

Q. Answer the question. I want to know whether you can. Listen to the question.

A. Oh, yes, I could.

Q. Will you?

A. No.

Mr. Turner: We ask the city to produce that broken up.

Commissioner Geiger: Are we making the order against the consent of counsel? Will counsel consent that it be brought in?

Mr. Turner: They haven't said a word.

Commissioner Geiger: I know. We are waiting for them.

Mr. Butler: Well, if the Commission please, I think we should want to discuss it and reach some conclusion. We haven't discussed this with Mr. Allensworth. We haven't discussed it among ourselves.

Commissioner Geiger: Let me ask you, this is addressed entirely to your compressor?

Mr. Calland: No, tool expense. This is just one item. Trucks and tool expense. We want to know what is in there and how much?

Commissioner Geiger: Have you a page in this exhibit showing your tools?

The Witness: No, sir, I don't make my appraisals that way.

Commissioner Geiger: Have you available any information that would help these gentlemen further to cross-examine you on that?

The Witness: No, I have repeatedly said, Your Honor please, that I have not made a catalogue list of tools.

Commissioner Geiger: That is enough. We can't order

3960

[fol. 487] him to produce anything that he doesn't have.

Mr. Turner: All right, he doesn't know it.

Commissioner Geiger: You may make such use of that as you see fit. He says he hasn't got it. That is all there is to it.

Mr. Turner: We are endeavoring to know how he got his percentage allowance other than the mere guess.

Commissioner Hopple: What rate of per cent did you allow for that item?

The Witness: Two per cent, of the total labor cost.

Commissioner Hopple: That is just an approximation on your part as a matter of judgment.

The Witness: No, it is more than that. It is a result of my observation and study of costs and construction work such as this over a good many years.

Mr. Turner: Does Your Honor mean for the compressor?

Commissioner Hopple: No, tools.

3966

[fol. 488] Q. Mr. Allensworth, you stated in explanation of the difference between your appraisal and that of the

company that certain of these gangs were over-manned, did you not?

A. No, I think I know what you are referring to. I made the statement in my opinion certain of the company's gangs were over-manned.

Q. That is what I asked.

A. I did not understand your question.

Q. Have you made any computation to determine the relative efficiency of your gangs and the gangs set up in the company's appraisal?

A. Yes, the gang efficiency as such would be greater in my set-up, but the overhead costs would be greater in my 3961

[fol. 489] set-up. In other words, the sized gang that I have used in making this appraisal would require greater overhead cost than a larger gang, but I have contended all through my engineering experience that a small, closely supervised gang will work more efficiently than will a large scattered gang.

Q. You disagree in that respect with Mr. Burgess, who testified the other day?

A. No, sir, I have no disagreement with Mr. Burgess. Mr. Burgess may have a different experience than I have.

Q. Have you made any computation to determine the relative efficiency of your gangs as against Mr. Burgess' gang?

A. No, sir, I never heard or knew anything about Mr. Burgess' set-up and his figures until he came into court here, excepting some very slight discussion that was had, and then I didn't know anything about the size of the gang or its performance.

Q. If it should develop that the gang used by Mr. Welker, company Exhibit No. 2 and Exhibit No. 6, were laying and jointing pipe and should produce a man hour performance of 1.67 feet, and yours should only produce 1.13 feet, would you still say that you had the more efficient gang?

A. Well, I can't say because I don't know what you were talking about yet.

Mr. Calland: Read the question.

(Question read.)

Commissioner Geiger: Wouldn't that manifestly depend on how many men are in the gang? Are the gangs the same size?

Mr. Calland: No.

Commissioner Geiger: That hasn't anything to do with man hour performance. That is gang performance. There

3962

[fol. 490] is no comparison.

Mr. Calland: Note an exception. We think there is a direct comparison.

Commissioner Geiger: It is a comparison of gangs and not of men.

Mr. Turner: It is a comparison of results.

Commissioner Geiger: All right. If you have it in dollars and cents, all well and good.

Mr. Turner: But we have got to get the data to work it out.

Commissioner Geiger: Have you got a question directed to him? If you have, he may answer, if you can do it quickly.

Mr. Turner: We are traveling pretty well, Your Honor. We cannot make the witness answer quickly. We are asking these questions pretty promptly.

The Witness: Not for the record, but I am looking for some information to answer that question. Now, will you read that question.

(Question read.)

A. Yes, I would because that particular illustration is not conclusive of anything.

Q. Now, refer please, Mr. Allensworth to page 58 of city Exhibit 66, which is labeled there "supervision and extras". Will you outline the duties of the clerks which you have set up on that page?

A. They are payroll and material clerks.

Q. Timekeepers you mean by that?

A. Yes.

Q. For how many men do you estimate one of these clerks can perform that service?

A. I won't be sure, that is, I won't be positive, but it

3963

[fol. 491] seems to me about 225 or 230 men, something like that, perhaps more than that.

Q. How many hours does that clerk work?

A. How?

Q. How many hours does the clerk work?

A. He should work nine hours a day.

Q. You said I believe that he keeps track of all of the material?

A. The material on the job.

Q. Do you have your men keep any records of the progress of the work daily?

A. What men?

(Question read.)

A. What do you mean by "your men".

Q. Do you have anybody keep track of that?

A. Certainly.

3964

[fol. 492] Q. Does this clerk do that?

A. Certainly not.

Q. Who does?

A. That is a part of the engineering and superintendence expense.

Q. Allowed for where?

A. In the general overheads.

Q. Do you have another man out there on the job to keep track of that besides this clerk? Do you have some other man besides this clerk on the job to keep that record?

A. No.

Q. Where does this man keep this record who keeps the information?

A. I am not referring to any man or men.

Q. Well, who?

A. I am referring to the provision made in my appraisal for engineering and superintendence. If superintendence means anything, it means keeping track of the work, and that is included in my allowance for engineering and superintendence.

Q. You do not mean by that that your superintendent is going to keep these records?

A. No, I say that the superintendence will.

Q. It is clerical work, is it?

A. You might call that engineering clerical work here.

Q. Keeping the records?

A. Yes.

Q. This clerk on the job, though, has nothing to do with that?

A. Not much, if anything.

Q. Well, what does he have to do with it?

A. Well, if the engineer or superintendent comes along and asks him how many men he has had on all day and how many hours they have worked, he would tell them.

Q. No record of the amount of work done per day or anything of that sort?

A. That is an engineering function in my estimation.

3965

[fol. 493] Q. Are you going to have an engineer go out there and find it out?

A. No.

Q. How is he going to get the information?

A. I provided for the cost of all of them.

Q. Yes, but how is he going to get the information. That is the question.

A. If you will let me answer your question, maybe I will tell you.

Q. All right.

A. I have provided for the cost of engineering and superintendence. Engineering and superintendence means the engineering of the job and the superintending of the job, and that means what engineer clerks might be required to assist the engineer is provided for.

Q. Now, I come back and ask you again, without going back to have the question read, what clerk or what person is going to collect this information for the benefit of your engineers and your superintendents.

A. The person that is a part of the engineering and superintendence organization.

Q. Mr. Allensworth, we have referred to compressor which is used for backfilling, I believe, and for testing and possibly other things. Do you know what one of those compressors weighs?

Commissioner Geiger: The compressor used for backfilling.

Mr. Calland: Yes, sir, a machine for tamping, I should have said.

Commissioner Geiger: I thought the compressor you were talking about was the compressor that puts the compressed air into the pipe to make the test.

Mr. Calland: We have got both.

3966

[fol. 494] Commissioner Geiger: You have got both? Well, distinguish them so that we may know.

Q. Answering the Commissioner's question, it is the same compressor? It is the same compressor?

A. Yes.

Mr. Calland: The question is whether he knows the weight.

The Witness: The weights vary with different makes, and I haven't the figures handy.

Q. What one did you use?

A. I didn't consider the specific weight.

Q. Doesn't it have to be moved around?

A. Surely.

Q. How are you going to move it?

A. It depends on how far you are going to move it.

Q. Well, you are laying pipe all over Columbus.

A. If you were going to haul it from place to place, you would hitch it on to a truck and pull it.

Q. Which truck in your set-up?

A. Any truck.

Q. Which in your set-up?

A. I provided for all of that in my allowance for tools and equipment.

Q. How much did you allow for it?

A. I haven't separated the amounts.

Q. Is that the same item as tool expense which we have mentioned here?

A. Yes.

Q. Now, refer to page 58—I beg your pardon. Strike that question out. We have covered that page pretty well. What is the basis of your 14 services per day set-up at Page 59 of your City Exhibit 66.

A. The basis of that performance of 14 services per day for the kind of a gang that I designate is my study of service laying performance. It was a point of very vigor-

3967

[fol. 495] ous contention before the Master in the Federal Court case. I believe and believed at that time, I still believe, that a crew of this size could and should install more than 14 pole services per day. But as I understand the

language of the Court, the Court said that, after consideration, the performance of the service gang should be fixed at 14 per day. So I have used from my opinion and modified my cost in this appraisal and show a service performance of only 14 a day.

Commissioner Geiger: Did you say that some court fixed 14 services a day?

The Witness: Yes, the Federal Court of this district in the former case, this Columbus Gas & Fuel Company case.

Commissioner Geiger: I get it.

Q. You referred to the Federal Court Case, Mr. Allensworth. As a matter of fact, didn't you first set up your performance at 11 services per day in that case?

A. No. That, however, might be misunderstood from the record. The fact was that in my original set-up of the cost of services in that case, there was an error in my original set-up, but my figures in that case as finally presented are 17 services per day, per gang.

[fol. 496] Q. How many service gangs are you going to employ in putting down the services in this plant?

A. I don't remember whether or not I worked that back into numbers of gangs in this particular appraisal or not. But whether I did or whether I did not, the cost per service would not be changed.

Q. Now, that was not the question, of course, what the cost would be. I want to know how many gangs you were going to have to do the work within the time?

A. Well, I am saying that I don't remember that I com-

3968

[fol. 497] puted this back into number of service gangs. I will be very glad to look that up, and if I have, I would be very pleased to give you the figures.

Q. Who supervised the work of these service gangs in your set-up?

A. I have provided a foreman with the gang.

Q. And you are going to tell us how many gangs?

A. No, I said I would tell you that I had made that computation. I don't remember at the moment whether I have or not.

Q. You have no supervision for that operation except the foreman of each gang?

A. Why, certainly. Engineering and superintendence is allowed all through my appraisal.

Q. In your general overheads?

A. Yes, sir.

Q. Who handles the clerical work in connection with the laying of services?

A. Now, you will have to tell me what clerical work you are referring to.

Q. Well, according to your figures in this case, there is more than a half a million dollars involved in laying down these services?

A. Yes.

Q. Wouldn't there be some clerical work keeping track of that expenditure of money?

A. Yes.

Q. Who does that?

A. The material would be issued from a store house. The material would be accounted for — the storekeeper. The foreman would turn in his time slips. The foreman would get an account of the material on his truck and the material used—that is, the material withdrawn and the material used.

Commissioner Geiger: Now, do you admit, Mr. Allensworth, in talking about a store room that service pipe and service connection would have to go to a store room and be 3969

[fol. 498] issued from a storeroom? It wouldn't be delivered directly from the train on the ground?

The Witness: No, Your Honor, these service pipes are small pipes.

Commissioner Geiger: I have got it. These service pipes go to a storeroom? First?

The Witness: Oh, yes, and——

Commissioner Geiger: All right. That is all right. I have got it now.

Q. Do you test these services in your set-up here?

A. Test them with an air compressor?

Q. Do you test them? That is the question.

A. Test them by turning the gas in them.

Q. That is the only way you contemplate testing them?

A. Yes, sir. Something that was a very long run, in the nature of a main, they would test it.

Q. Do you know anything about the custome of gas companies in that respect?

A. I have never observed the Columbus Gas & Fuel Company testing a service with compressed air.

Q. Did you ever observe them testing one with gas?

A. Well, I will say yes, but not recently. I don't know what they are doing today.

Q. How long ago did you see them testing one with gas?

A. It has been quite some years past.

Q. How many years?

A. Oh, I couldn't answer that. It was at the time I was engaged here and worked for the city and was keeping track of excavations and observing things.

Q. That was along in 1914 and '15?

A. I left the city service in 1914, yes, sir.

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[fol. 499] Q. What about the testing of the customers' service before the gas is turned in?

A. Testing the customers' service?

Q. Yes.

A. I don't know just exactly what you mean by testing the customer's service, but the service line after installation is tested or inspected, I should say—not tested, I should say, but inspected by a city inspector, building inspector.

Q. You never test it for gas?

A. You inspect it by turning gas into it.

Q. Who does that?

A. Why, the crew that lays the service.

Commissioner Geiger: Let me ask you this, Mr. Allensworth. How far towards the customer's gas burners does the service go furnished by the gas company? To the meter?

The Witness: No, to the curb box.

Commissioner Geiger: To the curb box?

The Witness: Yes, sir.

Commissioner Geiger: All inside the curb box is laid by a private plumber?

The Witness: Yes, sir.

Commissioner Geiger: Did he do the testing?

The Witness: Yes, sir.

Commissioner Geiger: Who puts in the meter?

The Witness: The company.

Commissioner Geiger: Who tests the meter?

The Witness: The meter is tested before it is put on the truck for delivery.

Commissioner Geiger: Who tests the meter connections

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[fol. 500] to see that there is no leak around the connection?

The Witness: The meter installer.

Commissioner Geiger: That is, the company then?

The Witness: Yes, sir.

Commissioner Geiger: But the service outside of the installation of the meter ends at the curb box at the curb stone?

The Witness: Yes, sir.

Commissioner Geiger: All inside of that belongs to the private plumber?

The Witness: Belongs to the property owner and is ordinarily in the plumber's contract.

Q. And is not tested so far as you know?

A. It is inspected by the City Plumbing Inspector.

Q. There is a difference between inspection and testing?

The Witness: Test it by putting gas in it.

Q. Who does that?

A. The plumber.

Commissioner Geiger: Now, Mr. Allensworth, isn't this the fact about that; if the plumber laid the new line of pipe from the curb into your house to a meter, before any gas is turned on, there is an air pressure put on to ascertain whether or not there is a leak?

The Witness: I have never observed——

Commissioner Geiger: Suppose there was a leak and there was gas on, would you have your house blow up before you find where the leak is?

The Witness: No, it doesn't work just in that way. In the first place, these service pipes are all very small pipes, and the jointing of that pipe does not present the possibili-

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[fol. 501] ties of leaks that jointing a very large pipe does. That is——

Commissioner Geiger: We got that. Go on to the next.

The Witness: The installation, before the gas can finally be turned on is inspected by the City Plumbing Inspector and the plumbing contractor pays the cost of inspection.

Q. Now, on Page 60, you set up performance of 108 split services, with fittings, per day. Can you give us any basis for that?

A. Why, if I remember, that allows 30 minutes for connecting the new fittings that go in to make up a split service.

Commissioner Geiger: What is a split service?

The Witness: A split service is where a service line is run from the main to a curb box, and then in case of an apartment house or double house, a fitting is put on the end of a service line and two curb boxes and two cocks are installed on the same line instead of one.

Q. Where are these split services located?

A. They are located in my inventory on the system of the company in the City of Columbus. I do not understand your question. I suspect that is not the answer you want.

Q. Yes, that is the answer. It requires some traveling to get to them, doesn't it?

A. The service has got to be installed where it lays, yes.

Q. But they are going to install one every 30 minutes in your set-up?

A. No, I didn't say they were going to install one every 30 minutes. I didn't make any such a statement.

Q. 30 minutes to connect the fitting; is that it?

A. Yes. That is quite different.

Q. How many men will be engaged in setting meters?

3973

[fol. 502] A. The same number as provided in the company's appraisal, if I remember correctly.

Q. Passing that for the moment, have you made any provision for any additional excavation for split services?

A. Not specifically. However, all of my service trenching, the excavation is over size.

Mr. Turner: Let it stand that way.

Mr. Butler: Didn't you want it that way?

Mr. Calland: Oh, yes, that is all right. We can't understand it, but let it stand.

Q. Who keeps track of the labor and material involved in the installation of meters?

A. The meter foreman.

Q. That is the same process you described a while ago with reference to the services?

A. Yes, sir.

Q. I want to direct your attention now to Page 3523 of this record that you were discussing, certain differences between company figures and yours, to this language:

"This difference is due to the fact that the company prices piping or services at a price per foot that includes mains, valves and fittings. In explanation of what the company did, after determining the price of pipe in mains, the company adds to the pipe cost of mains 5 per cent for fittings in mains, which fittings apply to L's, E's, crosses, valves, unions and such kinds of materials. Having determined the price of pipe in mains, plus the cost of fittings in mains, it uses as the cost per foot of pipe in services, the cost of pipe in mains, plus the cost of fittings in mains:"

Now, have you a copy of Walker Company Exhibit Number 6?

A. Not here.

3974

[fol. 503] Q. I will hand you a copy of Welker Exhibit Number 6 and ask you to look at Page 69. Have you got it? And tell the total material cost, including fittings and valves for the various sizes of wrought iron screw pipe.

A. Do you want me to read the figures on this page?

Mr. Huffman: You mean the company's figures?

Mr. Calland: Yes. There are only a few of them.

The Witness: This page to which you have directed my attention, namely, page 69 of what has been introduced as Company Welker Exhibit Number 6, I believe, contains the following items, the designation being wrought iron screw pipe, total material cost, one inch pipe, weight per foot——

Q. I just want the total material cost for each size of pipe.

A. One inch, .1189; one and one-fourth inch, .1610; one and one-half inch, .1821; two inch, B.W. .2462; two inch LW, .2797; two and one half inch LW, .4272; three inch, .5587; four inch, .7728; five inch 1.0495; six inch, 1.3604; eight inch, 2.0735; ten inch, 2——

Q. We have now gone as high as any service pipe?

A. Possibly?

Q. So we will stop there, and I will ask you to turn to Page 385 of that same exhibit. I want the same figures

now for the material price, unit price of the pipe of those various sizes in the services.

A. If I am reading this page to which you have directed my attention, which, as I understand you, is Page 385 of what has been marked Company Welker's Exhibit Number 6, you want me to read the price shown here for one inch pipe. It appears to be .12.

Q. All right. Go on down the line with the other?

3975

[fol. 504] A. Four inch by one inch malleable saddle, .91. One inch by six inch nipple——

Q. I beg your pardon? It is not necessary, to read all that detail. I merely want the total cost of material which was used in determin-g——

A. That is what I was reading.

Q. You are reading each item. I just want the total, the pipe.

A. The total 3.84.

Q. Did you find a cost per foot on that page, Mr. Allensworth, pipe for services?

A. Yes, I read it to you, .12. I only see one other pipe here.

Q. All right. You gave it for one inch pipe. Now, can you give it for one and a fourth inch pipe, same figure?

A. The figure that appears on this page is .11.

Q. The .11 you refer to is galvanized pipe, isn't it?

A. I take it to be that from investigation.

Q. I beg your pardon. I should have said that you should go on in these pages. It is not all on Page 385. It begins there. I want it for each size of wrought iron pipe. You will have to turn the pages to find it. Page 386 you will find it for one and one quarter inch pipe, won't you? Isn't it 16 cents?

A. If I read his page correctly, I think it is, yes, .16.

Q. Then on the same page, you have one and a half inch pipe?

A. It may be. I don't see it yet.

Mr. Butler: It is awfully hard to find anything there.

Mr. Turner: There isn't a thing in this case that can't be found in it and nobody knows it better than you do.

Q. On Page 387, you will find the one and one-half inch

3976

[fol. 505] wrought iron screw pipe.

A. There appears opposite that designation the figure .18.

Q. 19 cents, isn't it? On Page 389, you will find the same date for wrought iron services, two inch?

A. There appears opposite that designation the figure .24.

Q. 24 cents, isn't it?

A. I take it to be that, yes.

Q. Now, on Page 390, you find the unit prices for two and a half inch wrought iron pipe. What is that?

A. Opposite that designation, there appears the figures .42.

Q. And on Page 391 as to three inch service, you find the figure to be 54 cents, don't you?

A. I observe the figure .546.

Q. And on Page 392, you find that unit price on four inch wrought iron screw pipe to be 75 cents?

A. I notice the figures .75, yes, sir.

Q. One on Page 393, of that exhibit, you find the price for six inch wrought iron screw pipe, which you find to be $1.33 cents don't you?

A. I find the amount $1.33 opposite that designation, yes.

Q. Now, in the light of that investigation and check, do you still say that the company uses as the price of pipe for services the price of pipe in the mains plus five per cent. for fittings?

A. Why, yes, until I have had some opportunity to check and see whether I am in error or not.

Q. Will you do that? and report?

Commissioner Geiger: Do you mean that the prices per service are the same as the price in trench or is it 5 percent of the price per service?

Mr. Calland: The price of pipe was figured in the exhibit

3977

[fol. 506] as a price for the pipe plus five per cent for fittings. Mr. Allensworth said, as I read, that we had used that pipe plus fittings as the basic price for services.

Commissioner Geiger: All right, I get it.

The Witness: Yes, and I believed that to be true when I made the statement, and if I am in error, I would be very glad to make a correction. I am not convinced yet that I am.

Q. You will check that and let us know?

A. I will be very glad to check it.

Q. A little information further we need to check this up. On page 3508 of the record, you stated, "The manual performance in the company's detail is 2.874 cubic yards per man day." Will you be good enough to furnish us the details of how you arrived at that figure? We have not been able to check it out. It is Page 3508 of the record.

A. Yes, I would be very glad to. I haven't it at hand. But that is the company's totals divided by the number of men that the company used on the work.

Q. Will you make the computation for us? We have not been able to get it. I want to check it out.

A. I would be very glad to bring a copy of the computation I made. I am not going to make it again.

Q. At Page 3510 of the record, you stated that you had figured in all cases a 30 inch cover over the pipe. Does that statement apply to the services as well as to the mains?

A. It does not apply if limited entirely to service. But it applies, Mr. Calland, in this way, that I used for the services the depth of the trench that would correspond to the depth of the main

3978

[fol. 507] Q. You will have to explain that to me.

A. Well, in other words, in figuring services, I figured a trench deeper than would be required to install the services.

Commissioner Geiger: Why did you do that?

The Witness: To allow for the possible additional contingencies in interruption of that of digging a small trench as distinguished from digging a straightaway trench.

Commissioner Geiger: As a matter of fact, service pipes are not covered 30 inches, are they?

The Witness: No.

Commissioner Geiger: What is it? About eighteen inches?

The Witness: They start out about 29 inches on the average at the main and the dirt over the—the soil over the surface becomes shallower toward the curb box because of the crown of the street.

Mr. Calland: Anything further, Your Honor?

Commissioner Geiger: No, except this. You have allowed in your estimate 30 inches covering over all mains. Is that correct?

The Witness: Yes, sir.

Commissioner Geiger: Is that true?

The Witness: Yes, sir, that is true.

Commissioner Geiger: That is, in the streets, alleys, cross streets and so forth, there is an allowance and a proper allowance of 30 inches from the top of the pipe to the surface of the soil.

The Witness: Yes, sir, that is correct.

Q. Now, at Page 3518 of the record, you stated:

3979

[fol. 508] "For example, hauling men to the job, I have not contemplated that; in my reproduction cost, I would furnish transportation for trench diggers to get to the job."

Are we to infer from that statement that you claim the company has done that in their appraisal work?

A. Why, that is as I understood the testimony of the company's witness, yes.

Q. Will you please now as soon as you can point out the place, either in the testimony or the exhibits where you find that?

A. It may be in the exhibit. If that is not true, why, I misunderstand the company's appraisal.

Q. At Page 3521 of the record you stated this:

"In cast iron pipe, the change of breaking pipe in handling is very little. When such pipe is broken, the pipe is cut clean at the point of fracture and both ends are salvaged, so that the loss, if any, is meager in amount and is provided for, in my allowance for omissions and contingencies."

We would like to have you explain to the Commission what use the company would make of a piece of cast iron pipe cut from a length of joint?

A. The use would be made of it in fiitting in short lengths. Of course, I anticipate that counsel is going to next ask me the question, "Well, how can you fit a piece of pipe, cast iron pipe, that hasn't a bell on one hand and a spigot on the other?" And the answer is that fittings come both ways, and that is oftentimes done. The short ends are used

Q. Have you made any estimate of the cost of rehabilitating a piece of that pipe for use in that way?

A. The cost of rehabilitating?

3980

[fol. 509] Q. Yes, getting ready to re-use.

A. I could make a guess for you. It would be about 18 or 20 cents.

Q. 20 cents for what?

A. For cutting off a piece of pipe.

Mr. Calland: Will you go back, please, and read that question.

(Question read as follows: "Have you made any estimate of the cost of rehabilitating a piece of that pipe for use in that way, getting it ready to re-use?")

Commissioner Geiger: There you have something like humpty-dumpty's egg. The pipe is broken. You can make a something out of it, but you cannot rehabilitate it. You couldn't re-use it because it has never been used.

Mr. Calland: He said it was re-used.

The Witness: Oh, no, I didn't.

Mr. Calland: Now, I am asking if he made any attempt to get that so that it would be usable piece of pipe——

The Witness: No, I beg your pardon. I stated in my direct testimony that I had made allowance for such breakage, but it was too small to compute as a separate item.

Q. As I read your testimony, you said it would be a very, very meager amount?

A. Why, if I remember rightly, I stated in my direct testimony that I made no such allowance, that is, no allowance for breakage of pipe in mains as such. But there was provision in my overhead allowance for omissions and contingencies to provide for such things.

Q. Yes, and I merely wanted to know if in making that allowance, you have made any study of the cost of getting one of those broken pieces of pipe back in the system?

3981

[fol. 510] A. No, I did not. I thought I had answered that.

Q. You said 18 or 20 cents.

A. I beg your pardon. You asked me for an amount and I said I would make a guess if you wanted me to, but I

didn't make any such estimate in the original set-up of my appraisal.

Q. Now, referring to Page 3507 of the record——

A. Pardon me.

Q. Excuse me.

A. The question that you asked me just a few moments ago, Mr. Calland, about hauling men from the job, I find this wording on Page 149 of what has been introduced in this case as Company Welker Exhibit Number 6, under the item or title, moving material on job and hauling men to job, and it is from that circumstance that I understood that the company had provided in its appraisal for the cost of hauling men to the job.

Q. All right. Now, have you examined the allowance you made for that cost in that?

A. No, there is no separate allowance. There is a cost of trucks here and equipment.

Q. In that item you just read, isn't there an amount opposite that?

A. The cost of a one and one-half ton truck, $12.50 a day.

Q. In order to make it this kind of pipe we have been talking a lot about, six inch pipe, on Page 147, what is the cost per foot laid for moving material on the job and hauling men?

A. As I read this Page 147 of the company's exhibit, it appears in the amount of .0222.

Q. Yes.

A. Which I take it to be 2.22 cents per foot.

Q. That is right. That is all I wanted on that. Now, I want to refer to Page 3507 of the record, where we find

3982

[fol. 511] this statement:

"In estimating the cost of pavement over mains, the company includes in the cost of pavement the cost of breaking and removing pavement; in other words, the trench space occupied by the pavement figured once in the cost of excavation and again in the cost of breaking and removing pavement."

Do you recall that statement?

A. Yes.

Q. "The total space occupied by pavements in the company's reproduction cost is 10,446.09 cubic yards. The

amount of excess in the company's reproduction cost for this item is $19,302.50, and the total effect of this error in the company's reproduction cost after adding its factors for undistributed construction cost, going concern value and other factors, is $25,527.57.''

First, I would like to have you furnish tomorrow or as soon as you can, the details of how you arrived at the $19,302.50.

A. Yes, I shall be pleased to do that.

Q. But at this moment, I want to ask you to refer to Page 354 of Welker Company Exhibit Number 6. Tell the Commission the adopted total unit cost appearing on that page for repaving brick on concrete. I selected that as one example.

A. The amount here appears, as I read it, on Page 354 of what has been identified as Company Welker Exhibit Number 6, $5.03.

Q. Now, refer to Page 213 of Welker Company Exhibit Number 2, a copy of which I ha-d you.

A. 213?

Q. And tell the Commission the unit cost which was applied in determining the cost of repaving of brick on concrete?

A. $4.76, as I read it on what is designated page 213

3983

[fol. 512] of what has been identified as Company Welker's Exhibit Number 2.

Q. Now, with those two pages before you, tell the Commission whether or not relative differences appear as to the other classes of pavement, without giving the amount?

A. I think they do. I didn't think to look this up.

Q. If it should develop that these differences between total depth unit cost appearing in Company Welker's Exhibit Number 6 and the applied unit cost appearing in Company Welker Exhibit Number 2 was due to the allowance for the trench space occupied by the pavement, and therefore not by earth excavation, would you then care to change your statement that the company made a mistake in its appraisal?

A. If that were true, I would change the statement, but I don't believe it.

Q. I asked you if that should develop?

A. If that should develop, and if that is true, I would be very glad to change my statement.

Q. This morning, Mr. Allensworth, you answered me what I asked you a question about quotations in the company's exhibit Number 6 that they were appraisal quotations; is that right?

A. No, I didn't say that.

Q. That some of them were? Or what did you say?

A. I said that one of them was.

Q. You would not use, I take it then, an appraisal quotation?

A. I might and I might not. I have on occasion, after I tested them against the market price, and knowledge of prices.

Q. Did you ever use appraisal quotations in an appraisal?

A. Yes.

Q. Tell us one of the cases where you used them?

3984

[fol. 513] A. In the state-wide appraisal of the telephone properties in Minnesota.

Q. How about the appraisal of the state-wide properties of the Bell Telephone Company in Ohio?

A. I used the quotations. None of them, however, as I remember it, were appraisal quotations. I may have used quotations that I got from dealers and manufacturers, but I don't remember that I received any quotations that said on the fact of the quotation, "This is for appraisal purposes."

Q. All right. To refresh your recollection then, I want to read first from Page 2790 of the record in the investigation of the state-wide telephone rates of the Ohio Bell Telephone Company in the State of Ohio, the following:

"In erecting my unit prices for cable, I used the quotations of the Standard Undergroudn Cable Company."

Do you remember that?

A. Yes.

Q. Now, I want to read one statement from page 2782 of that same record, the following:

"Going back then, I have before me a letter from the Standard Undergroudn Cable Company, dated October

14th, 1927, the company file number of this correspondence being 5092, address- - to H. R. Allensworth, Consulting Engineer, 515 Chamber of Commerce Building, Columbus, Ohio. We quote you as follows on material make-up as indicated, subject to the terms and conditions mentioned on the back hereof, except as hereinafter modified."

And opposite the form title on the letter, quantity and price, there is "Quotations for estimating purposes only".

A. Yes, I remember that very specifically.

3985

[fol. 514] Q. You used that as the basis for your appraisal of the Bell Telephone Company?

A. After I had checked those prices with my own cost system and my own knowledge of cable costs, yes.

Q. Do you remember this statement, on the bottom of that same letter, which appears at Page 2785 of the record in the Bell Telephone Company case:

"By naming these prices, we do not care to accept any responsibility for their use or obligate ourselves in any way to supply the cables involved at such prices?"

A. I think if you read on I explained that that is——

Q. Isn't that what was on the letter?

A. If you say it was, I will agree that it was.

Q. You recall about explaining it?

A. Yes.

Q. Then you recall it was there, don't you?

A. But I don't remember the wording of that letter.

Mr. Calland: That is all for tonight.

3994

[fol. 515] Q. Mr. Allensworth, you claim to be a specialist on economic subjects; that is subjects having to do with the relation between engineering, management and financing, do you not?

A. No, sir.

Q. Didn't you so claim at page 2285 of the transcript in the Federal Case and haven't I read your language from there?

A. No, sir, you have not.

Mr. Butler: Give us a force like you have got and we will put this rate down to 30 cents.

Mr. Turner: Give us a few witnesses like you have got and we will have it at a dollar.

Mr. Huffman: You are pre-judging the case, aren't you, Mr. Turner?

Mr. Turner: I am answering Mr. Butler.

Commissioner Geiger: Confine yourself to questions to the witness and answers from the witness, gentlemen.

By Mr. Turner:

Q. Did you not state this at page 2285 of the record in the Federal Court Case, "For the past 11 years, since 1914 in fact, I have specialized in public utility economics, devoting most of my time to public utility appraisals and rate procedures. I have had experience in public utility financing, accounting, management and operating problems"?

A. Yes; now will you read it again and tell me where I used the word "expert"?

Q. Specialist is the work I used; I think I copied this——

A. Well, you didn't use the word "specialist".

3995

[fol. 516] Q. Well, we won't bother about that; give me your financial structure which you would set up to finance the reconstruction of this property?

A. I have made no study of such financial structure; therefore I cannot give it to you.

Q. How then can you tell us the cost of interest during construction or the cost of finances?

A. I have not testified to the cost of finances of this property, and the determination of interest during construction is a separate study entirely apart from any study of financial structure.

Q. How would you arrange a three year construction program so that the capital going into the construction would not be idle for more than one year during the construction period?

A. What is that question? Read that question again.

(Question read.)

A. By placing the plant into operation as expeditiously as possible during the three year construction period.

Q. Is that your only answer?

A. That is my answer and is very explanatory I believe. However, if you want me to amplify it I will explain.

Commissioner Geiger: Wait a minute until he asks for it.

By Mr. Turner:

Q. Oh, I would like to see your program—your set-up; have you made any such set-up?

A. What set-up?

Q. A set-up showing the parts of construction that would be completed so as to be used within a year?

A. No; I have just stated——

Q. Have you made such a set-up?

A. No, sir, I have not made such a set-up as you call it, if I understand what you mean by a set-up. It is rather an obscure term to me. I don't understand what you mean exactly.

3996

[fol. 517] Q. Have you laid out a program for the construction of the plant during the three years as to what parts would be completed within specified times or allotted times?

A. I conceived a program, yes.

Q. The question is have you; you can answer it——

A. I conceived a program, yes.

Q. Where is it?

A. I conceived a program——

Q. Where is it?

A. It was in my mind at the time I determined on the three year construction period.

Q. That is where most of your information is, isn't it, when we attempt to analyze it, in your mind?

A. Very largely.

Q. How many years——

A. I have not completed my answer.

Q. How many days in the——

Mr. Huffman: Just a minute.

A. I have not completed my answer.

Q. Go ahead.

A. Very largely an engineer's information and knowledge should be in his mind. Mine is also.

Q. But what we want to get at to cross examine you is the details of that so that we can see and put it up to other engineers, whether or not your deductions are reasonable.

A. Well, I want to help you just as much as I can, Mr. Turner.

Q. Why hide behind the fact that it is in your mind instead of giving us the program?

A. Well, I resent the accusation; I am not hiding behind anything.

. . . . . .

[fol. 518] Q. Well, let's take that up right now; how many times in the telephone case here did you say that it is your opinion, and they could get nothing further from you?

A. I don't know how many times I made that statement

3997

[fol. 519] but I made the statement every time that a question requiring that answer was asked.

Q. You made that statement in respect of labor costs of poles at page 2903, didn't you?

A. I don't know whether I did or not.

Q. Well, do you deny it?

A. No, I don't deny it.

Q. You made the same sort of an answer at page 2981 as to right-of-way, didn't you?

A. I don't know whether I did or not.

Q. And at page 2992 as to right-of-way?

A. I couldn't tell you.

Q. And page 3249 as to incidental expense?

A. I don't know whether I did or not. I would have to read the record.

Q. And at page 3254 as to pole digging?

A. The same answer.

Mr. Butler: Maybe he did it by the advice of counsel.

Mr. Turner: He didn't do it by the advice of counsel now, if you ask for that; he did it over the protest of counsel. If you want to get into that we can get at it.

Commissioner Geiger: Mr. Allensworth when you answered those questions who propounded the questions to you?

The Witness: Mr. Burr, counsel for The Telephone Company; it was on cross examination.

Commissioner Geiger: Who was counsel on the other side at that time in that case?

The Witness: The Attorney General of the State of Ohio, Mr. Edward C. Turner.

Commissioner Geiger: Did he offer you as a witness in that case?

The Witness: He did.

3998

[fol. 520] Commissioner Geiger: And you testified for the State of Ohio as a witness for the State of Ohio in that case?

The Witness: Yes, sir.

Commissioner Geiger: All right.

Mr. Calland: In the light of that, may I say a word or two; I was the special counsel in that case and I just want to add, in the light of your questions, a few facts; I want to make the statement that it was a difficult matter for me to reconcile these answers with General Turner but it was all the witness would give and we had to be satisfied.

Mr. Huffman: The gentleman wants to—— .

Commissioner Geiger: The fact remains that he was your witness in that case. All right.

4003

[fol. 521] Q. What is your own organization, Mr. Allensworth, how many people have you got in that?

A. What organization?

Q. Your own.

A. Do you mean my personal office organization?

Q. Yes.

A. I have two people on my payroll.

Commissioner Geiger: Is there any objection to this?

Mr. Huffman: Yes, we object to that.

Mr. Turner: Note an exception.

Commissioner Geiger: You are asking for the organization of a peanut stand that is——

Mr. Turner: That is just exactly what I want to get at, the comparison of a peanut stand.

Commissioner Geiger: I don't mean that, but that would not have any more to do with it than——

Mr. Turner: All right, we think it has and I am saying that with a good many years experience in cross-examination. We have never met with such trouble in cross-examination before.

Mr. Butler: The same man gets a real case once in a while.

4004

[fol. 522] Mr. Turner: Once in a while he gets a real case. I haven't had any in times gone by except before Justices of the Peace and I can show a similar record.

By Mr. Turner:

Q. Where did you do your work—your laboratory work in metallurgy?

A. My laboratory work in metallurgy, you will have to be more specific. Metallurgy is an awful broad subject.

Q. Where did you do any laboratory work in metallurgy?

A. Well, I think I started chemical research in inorganic chemistry when I was probably 13 or 14 years old.

Q. Under Professor who?

A. Under my highly revered father who was mechanical engineer and an industrial chemist.

Q. All right.

A. I followed that through all of the years of my life and for the 12 years that I was employed by the city I had a chemical laboratory that I set up as a part of my work and I still have in my home today a small chemical laboratory where I still work with chemicals and make analyses.

Q. Granting all that, what has that got to do with metallurgy?

A. Well, inorganic chemistry is the chemistry of inorganic substances which are very largely what you would designate metals.

Q. What would you designate them?

A. I designate them as inorganic elements or compounds.

Q. Is that your answer to my question?

A. I think that is a very good answer.

Q. All right; how many educational degrees have you, Mr. Allensworth?

A. Graduate degrees, none.

Q. Well, undergraduate degrees what?

A. Well, I don't think that you want me to—I shall say none.

Q. You shall say none?

A. Yes.

4005

[fol. 523] Q. All right; how old are you?

A. I am 50 years old.

Q. When did you start to school?

A. I started to school—I can't tell you that.

Q. How long did you go to school?

A. I suppose I started to school when I was about six years old.

Q. How long did you go to school?

A. I went into the high school I think two years.

Q. Two years in high school; what high school?

A. Central High School in Columbus.

Q. And that is the extent of your education, is it?

A. Certainly not.

Q. Where did you go after that?

A. I have been a student and been learning for 50 years. I did not stop learning when I left high school.

Q. For 50 years?

A. Yes.

Q. Did you ever attend a college or high school or anything else in which you received instruction in laboratory work in physics?

A. If you refer to registered students in a college, no, but I have done considerable work in the physical and electric laboratory of the O. S. U.; some of it under my own direction with college professor assistance.

Q. Assistants, what were their names?

A. The one man that worked for me on one proposition was Allen E. Flowers.

Q. Is he dead?

A. I don't know whether he is or not, I have not heard of him for quite a few years.

Q. Did you ever work as a cost accountant any place?

A. Yes.

Q. Where?

A. I worked as—my official title with the Ohio State Telephone Company was valuation engineer.

4006

[fol. 524] Q. You were a cost accountant?

A. And in my responsibilities of valuation engineer I did more or less cost accounting and made studies of cost accounting and also in the Minnesota properties.

4007

[fol. 525] Q. I am trying to find out some place where you have worked as a cost accountant.

A. As a factory cost accountant?

Q. Any kind of a cost accountant.

A. Are you referring to a designation on a payroll as cost account-? If you are I have never held any such position.

Q. I didn't think so. Now, you quit school in the second grade; did you go to work right away?

A. Yes, I quit school to go to work.

Q. How old were you then?

A. Well, I suppose I was 10.

Q. Where did you go to work?

A. In a telegraph office.

Q. What one?

A. I was a telegrapher and I worked for the Postal Telegraph Company.

Q. How long did you work there?

A. Oh, off and on for quite a few years.

Q. How many years?

A. I can't tell you exactly.

Q. You can't tell; where was your next job?

A. Well, I can't tell you that because you are getting into a situation where I have a lot of jobs.

Q. That is just exactly what I want to iron out here.

A. Yes.

Q. Give all these jobs.

A. All right; I will be glad to tell you about them; I am very proud of them.

Q. Go ahead.

A. When I was 14 years old I learned telegraphy; when I was 15 years old I held down a job as telegrapher and had employees in the office under my direction and supervision, and from that time on continuously I have never had a job in which I did not have supervision of employees, or people under me.

Q. Give the next job.

4008

[fol. 526] A. And while I was employed by that Company I went to a broker's office and was a telegrapher in a broker's office in the days——

Q. Which office?

A. (Continuing:) Before they had stock tickers in this territory and I was obliged, as a telegrapher to take the stock quotations off the Morse wire and write them on the

blackboard. That was in the office of a branch of The Central Stock & Grain Exchange, the wires of which originated in Chicago. And while I was there Mr. Marcus A. Hanna conducted a campaign for the senatorship and the management of the Telegraph Company delegated me to be the private telegrapher to Mr. Marcus A. Hanna.

Subsequent to that I went back to the telegraph office and the Fire Department sent for me and they wanted somebody who not only was a telegrapher but had some knowledge of the mechanics of telephone and telegraph and I went into the office of the Fire Department the first time when I was 16 years old.

Q. And you had all this knowledge at that time?

A. I did.

Q. All right.

A. I was a student of mechanics, engineering and mechanical engineering from the time that I was old enough to read.

Q. Well, let's follow one line now——

A. We can't follow one line because I am telling the story and there are many lines.

Q. Well, now, just permit me to conduct the cross-examination will you?

Mr. Huffman: Let him go ahead and tell his story.

Mr. Turner: Wait a minute, now; you are there to bring out anything that I may omit. I am trying to get a different sort of a story about where he worked and when.

4009

[fol. 527] Mr. Huffman: He is telling you where he worked and what he did.

Mr. Turner: All right.

The Witness: Well, now——

Q. You are in the Fire Department at 16; how many men were under you there?

A. I was only there a few weeks and that was a few weeks where there was nobody under my direction those few weeks.

Q. I see; just for a few weeks.

A. Yes, sir.

Q. What happened after that?

A. There didn't anything happen.

Q. Well, what did you do?

A. I was in the telegraph office and was occasionally in the Fire Department headquarters and I came up to the time when I was 19 years old and I went to Cleveland. At the age of 19 I was foreman of a construction crew and I had a construction crew under my direct supervision.

Q. Constructing what?

A. A telephone plant.

Q. A telephone what?

A. Plant.

Q. What kind?

A. Telephone plant; the facilities of a telephone exchange system.

Q. Well, cable or what?

A. Cable and wire.

Q. Conduits?

A. I did not have any conduit-laying, no, sir.

Q. No trench digging?

A. No, sir. I did not have in Cleveland.

Q. All right, what next?

A. At the slackening up of that work I returned to Columbus.

Q. At what age?

4010

[fol. 528] A. And was on my way to the office of The Postal Telegraph Company to report for work and the Fire Chief happened to drive along in a wagon and he stopped and he says "Where have you been?" and I told him and he says, "For months we have been looking for somebody to run our exchange down there and you are the fellow; will you go to work for us?"

Q. We are looking for somebody to run the Gas Company, too.

A. You asked my story of my experience.

Q. Go ahead and tell it.

A. I have nothing to be ashamed of.

Q. Oh, no there is nothing to be ashamed of, Mr. Allensworth, in work; go ahead.

A. I went into the office of the Fire Department and took what is known as a trick in the operating room. For that particular period, modifying my former statement, I did not have men directly under my supervision.

Q. How long was that?

A. That I could not tell you, off hand.

Q. About how many years?

A. Well, it was not many years, but, following that, I submitted to an examination for Superintendent of the Fire and Police Telegraph at the local Civil Service Commission and passed that examination and was appointed to that position in September, 1902. That brings me up to the age of 22, and at the age of 22 I was the City Electrician for the City of Columbus and I say with some pride that I was the youngest City Electrician in the world because we had an International Association of Municipal Electricians and——

Q. And how long did you stay as Superintendent of the 4011

[fol. 529] Police and Fire Alarm System?

A. 12 years.

Q. During that 12 years can you give me the amount of conduit that was built in the streets of the City of Columbus by the Fire and Police Departments?

A. No, I cannot.

Q. About how many?

A. Well, I couldn't tell you that.

Q. There was not a mile of it, was there?

A. Oh, yes.

Q. Where?

A. It was all over the city.

Q. What do you mean by "all over the city"?

A. Well——

Q. I am talking about conduits, now.

A. So am I.

Q. There were not conduits all over the City of Columbus at that time, were there?

A. Wasn't there?

Q. I am asking you.

A. I was in charge of the work and I tell you there was.

Q. Well, how many miles of it?

A. I cannot tell you the miles.

Q. Was there a single mile?

A. Yes.

Q. Where?

A. A single mile in one piece; is that the question?

Q. Yes, take it that way.

A. No, I don't think there was.

Q. Was there a single half mile in any one piece?

A. I would not know; I doubt it—a half mile in one

stretch; you are talking about municipal conduit?

Q. I am talking about that that was under your department.

A. No; as I testified yesterday those were small extensions.

Q. Just street crossings, weren't they?

A. Oh, no, oh, no. Inasmuch as you have raised the question and Mr. Calland went into that yesterday I will 4012

[fol. 530] tell you the story. The City of Columbus——

Commissioner Geiger: Wait a minute; he asked you something that does not call for a story.

By Mr. Turner:

Q. In what parts of the city; name them, now, were the police and fire alarm system conduits at the time that you were Superintendent.

A. They were all over the city wherever the two telephone companies had conduit runs.

Q. The city didn't build that conduit, did it?

A. No, sir, that is what I am telling about.

Q. You claim to be an expert on business management? Do you?

A. No, sir.

Mr. Butler: Don't you want him to finish what you asked him to state about his employment?

Mr. Turner: Oh, yes, but I thought he had stopped.

Mr. Butler: Well, you stopped him, of course.

By Mr. Turner:

Q. Well, if I stopped you, Mr. Allensworth, please resume.

A. Well——

Q. You were down to the age of 22—let's see—34 now, in 1914; what happened then?

A. I was employed by The Ohio State Telephone Company with the title as Valuation Engineer. But, incidentally during the term that I was City Electrician I served as consulting engineer to other cities and other persons in various engineering undertakings while I was——

Q. We will ask you to name them.

A. Well, I cannot name the cities, but I was called in by various cities. I acquired somewhat of a reputation. The word that you used, Mr. Turner; which I never do, as the expert of the Fire and Police Telegraph systems I never claimed to be an expert on anything. You tried to put that appellation on me but I resent it.

4013

[fol. 531] Q. You resent being called an expert?

A. Yes, I am an engineer, I am a professional engineer.

Q. What kind of a professional engineer?

A. I specialize in public utility economics.

Q. You specialize in public utility economics?

A. Yes.

Q. That does not include financing?

A. It does.

Q. And it does not include management?

A. It does.

Q. I thought you were not an expert on business management.

A. I say I am not an expert on anything.

Q. I am glad to understand that; go ahead, now; I don't want to be interrupting.

A. Well, I rather enjoy the interruptions.

Q. Well that is all right.

A. They encourage me.

Q. You go ahead and tell the rest of your life story; you are down to 1914, now.

A. Are we?

Q. I thought so.

A. Oh, that is different; I haven't quite got there yet. Going back now, I was reciting the fact that during my employment with the City I was employed as a consulting engineer for various cities and various enterprises——

Q. And I——

A. And you interrupted me and say, "We have to know about that" and then you start to inquiring about different cities and then jump ahead and say "Go on during the year 1914", but we are not up there yet. I have not completed telling you where these employments were as consulting engineer.

Q. I will say you haven't, so go ahead.

A. That is up to 1914, I have not completed them.

Q. All right.

A. In addition to being called in by various cities as an
4014
[fol. 532] engineer on fire and police signalling systems and such matters, telephone and telegraph engineering entirely, I was retained, or I was employed by a financing or promotion, I should say, Company, that contemplated an electric railroad from Cincinnati by way of Wilmington and Xenia into Columbus. The special engineer on the work was Mr. Henry C. Rohr, who had done some very monumental work through the West in the Rocky Mountains. The line was surveyed; the right-of-way was acquired from the City of Cincinnati——

Q. Did you do all this?

A. No.

Q. Well, I want to know just what you did.

A. Oh, do you; well, I am telling you what I did and in my own way.

Q. You are telling me what a lot of other people did.

A. Well, I choose to tell you that way. That line was surveyed and the right-of-way was acquired, either directly or by option, from Cincinnati clear to the Scioto River bank in the City of Columbus. My employment was directly under the general counsel as an engineer to work with the promotors in negotiating the franchises for the electric light service which was proposed in various communities that this line was to pass through. Also it was supposed that I would eventually take up the matter of power distribution, electric power distribution, other than the power generaled and consumed by the railroad. That project was—I use the word "peddled" all over the world and——

Q. Your services were peddled?

A. No, this project. You are asking me if I ever had any experience in financing and I am telling you some of it. It went first to the House or banking organization
4015
[fol. 533] of J. P. Morgan & Company.

Q. Did you take it there?

A. No; the man that I was closely associated with did, a Mr. J. C. Carswell, of Philadelphia. The banking concern of J. P. Morgan & Company referred Carswell and Castle, another Philadelphia promoter, to a crowd of London—English underwriters and——

Mr. Turner: How does this give his experience of what he has done?

Commissioner Geiger: If somebody will object to it——

Mr. Turner: Well, I am inclined to object — it.

Commissioner Geiger: Objection sustained.

Mr. Turner: I am asking him to state what he did.

The Witness: That is all a part of my experience; I lived with the thing for about three years.

Commissioner Geiger: State in a very brief way that you were engaged by a Company and the Company endeavored to finance a line from Cincinnati to Columbus and failed; that was all there was to it; that is enough.

By Mr. Turner:

Q. Is that correct?

A. It failed to be financed, yes.

Q. You did not do any part of the surveying?

A. No, I am not a civil engineer.

Q. You did not take any part of the option of the right-of-way?

A. Oh, yes, I did.

Q. What part did you take?

A. Oh, yes, yes.

Q. Well, let us have it.

A. I got all of the options in Columbus and the permits of abutting property owners on the streets. I had under option all of the land that is now occupied by this new State Office Building from State Street to Broad Street.

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[fol. 534] I held those options personally for about 18 months.

Q. Go ahead, now; you are down to what year?

A. I am not down to any specific year.

Commissioner Geiger: Direct your questions to specific things. You might keep him in a narrow channel. Did you say you are down to a certain year; tell us from then on. Otherwise he will tell you things you may not want to hear. But go ahead.

Q. Mr. Allensworth, in order that I may get a sort of a new start, what was your employment in 1914?

A. I was employed by the City of Columbus.

Q. In what capacity?

A. The title was "Superintendent of Fire and Police Telegraph"; the position was really that of City Electrician.

Q. Now, after that what was your next position?

A. Well, I had other engagements prior to 1914 that I have not recited.

Q. Well, if you care to recite them, won't you be kind enough, instead of saying "various cities" and "various persons" to name the cities and name the firms, persons or corporations who employed you?

A. Yes, I will be very glad to.

Q. All right; that will help us.

A. During the period that I was discussing just before recess, that is from 1902 until 1914, in addition to the work recounted in my discussion, I was employed as consulting engineer on the design and layout of a garbage reduction plant, that was built at Newport, Kentucky. I was employed by a man by the name of John C. Herman, who had the contract or franchise to dispose of all of the garbage and refuse of Newport, and at the time, was negotiating

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[fol. 535] with the city of Covington, Kentucky, for a so-called garbage contract. That garbage plant was completely designed by myself and there was one important factor in garbage reduction that I originated in my design of that plant that was afterwards used and is now used in a great many plants around the country, and that is namely a method of preventing the escape of obnoxious odors from the plant while it is in operation.

Also during the same period I was employed by the—I cannot tell you who they were excepting the contact was through a man by the name of John C. Herman, who contemplated the purchase of some electric light properties in Ohio and in 1907 I made the first appraisal of a public utility property that I had made. That was an electric light plant at Roseville, a small plant. It was contemplated there to buy up that small plant and serve a number of communities in that district.

There probably were other special employments of an engineering nature that I had during those years that I do not, at the time, recall; but in 1914, in September, I was employed by The Ohio State Telephone Company as valuation engineer for that Company and while in the employ

of the Company, while my designation in the organization was valuation engineer; I handled the valuations of the Company and inventories, valuations and cost studies, and all of the facts and circumstances attendant to making a valuation of a large public utility property. The largest single undertaking on hand at the time was the inventory and appraisal of all of the Cleveland property of that

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[fol. 536] Company. And in addition thereto I served the company as an engineer in other capacities. For example, I completely revised and rehabilitated a telegraph system throughout the district served by The Ohio State Telephone Company, and in that connection, perhaps it is necessary for me to explain that the Telephone Company had long distance lines and considerable revenue derived from those lines by leasing them for telegraph purposes for broker's wires and news service.

One of the most profitable leases was cancelled. The Directors of the Company conducted an investigation and found that it was cancelled because of not very good telegraph service, and thereupon I was placed in full charge and full responsibility of completely building a high speed, high efficient telegraph service for that Company. I built that system and it was put into operation.

Also I made special studies of various kinds throughout my employment with the Ohio State Telephone Company, for example, fireproofing central office buildings; power supply in a large building; power supply for telephone exchanges. I made an investigation and report of a steam engine driven electric generator installation in the Cleveland central office building of the Company. That was known as the Electric Building. It was a combined office and exchange building.

My activities with that Company went far beyond that of valuation engineer.

Q. What was your salary?

A. My salary with the Telephone Company when I started, I think was $2,100.00 a year.

Q. And when you ended?

A. I don't remember, Mr. Turner.

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[fol. 537] Q. It had not increased any, had it?

A. Well, I don't recall; that is what I don't remember.

Q. All right.

A. While I was employed on that property I was called to the property of The Columbus Railway, Power & Light Company.

Q. What year?

A. I don't remember, but I think it was in the year 1916.

Q. 1917, wasn't it?

A. I don't remember that; I think it was 1916; it might have been 1917. But whether or no, there was a time when I was on the payroll both of The Ohio State Telephone Company and The Columbus Railway, Power & Light Company.

Q. May I ask you a question right there while it is fresh in your mind; you did not draw a regular salary from The Columbus Railway, Power & Light Company, did you?

A. I certainly did.

Mr. Huffman: Well, I object to that; I cannot see the materiality of that.

Commissioner Geiger: Well, he does not object to answering it; let it go in.

Mr. Huffman: Note an exception.

Q. What was your salary?

A. I was on the payroll of The Columbus Railway, Power & Light Company and I don't—I won't be sure—but I think that The Columbus Railway, Power & Light Company paid me $1,800.00 a year at that time I was drawing $2,100.00 from the Telephone Company.

Q. Let me ask you right there; you were with The Columbus Railway, Power & Light Company as I understand it, from January the 16th, 1917, to June 15th, 1918, and what

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[fol. 538] time were you in Minnesota?

A. I was in Minnesota at the same time.

Q. Yes, but you were back and forth once in a while to the Railway & Light; now doesn't that recall to your mind that you were not on the payroll but you occasionally worked and were paid for the actual days you were there?

A. I recall very definitely that I was on the payroll.

Q. All right, but you were off on June 15th, 1918, weren't you—terminated?

A. I don't know where you get that information. It is possibly true; I won't say that it is not.

Q. All right, go ahead.

A. But I was employed by both The Ohio State Telephone Company and The Columbus Railway, Power and Light Company for a part of that time and then——

Q. And the Minnesota—and The Tri-State Company part of that time?

A. I am making this statement, if you will pardon me. And during that time I was called to the property of the Tri-State Telephone and Telegraph Company in Minnesota at which time I severed my connections with The Ohio State Telephone Company but remained on the payroll of the Columbus Railway, Power and Light Company, and I was in Minnesota and Columbus for some time, I don't remember how long.

Q. Approximately how many years?

A. I was in Minnesota approximately six years. I am saying that I don't remember how long I was on the payroll of both The Railway, Power & Light Company and the Minnesota property.

Q. In what year did you leave the Minnesota properties?

A. I came back to Columbus, as I remember it, in 1923. Now, going back to the point where I was interrupted, I was

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[fol. 539] called to the property of the Tri-State Telephone & Telegraph Company in Minnesota, and for awhile, devoted my time between Minneapolis and St. Paul and Columbus, and later on there was perfected a contract between the Bell Interests and the independent interests that is The Tri-State Company, for a purchase and sale of property in the state of Minnesota—division of territory, and at that time my entire time was demanded by the Company. I came back to Columbus and severed my connections with The Columbus Railway, Power & Light Company and from that time on until I left there in 1923 I spent practically all of my time in the state of Minnesota, having in charge the appraisal of all the property of the Tri-State Telephone and Telegraph Company in the state of Minnesota, the Northwestern part of Wisconsin and the eastern part of South Dakota and the eastern part of North Dakota.

Q. May I interject a question there?

A. And incident thereto——

Q. How much trenching work did you do in Minnesota?

A. I was not engaged in construction in Minnesota; I did not do any trenching work.

Q. All right.

A. And incident thereto, taking up my discussion where I was interrupted, I made an appraisal of those properties for a rate case which was pending before the Minnesota Railroad and Warehouse Commission, and in addition, an appraisal of the same properties for sale to the Bell interest; likewise appraisals of properties of the Bell Company that were purchased by the Independent telephone

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[fol. 540] company. While in Minnesota I was called into other matters as consulting engineer.

Q. What other matters?

A. I made a report on a traction line that run out of Minneapolis southeaset to—I forget the name of the town, but the traction line——

Q. Was it built; was it ever built?

A. Certainly it was built.

Q. Well, that is what I am asking you.

A. I made a report on that traction line, I said. It was in operation and was facing bankruptcy at the time that I made the report on it, but I made the report for a Committee of public spirited citizens of Minneapolis who wanted to find some way to save the traction line for Minneapolis.

Also, there was organized by a crowd in Chicago what was incorporated as The Indian Sugar Corporation. I was retained as consulting engineer by The Indian Sugar Corporation which proposed to engage in the manufacture of malt sugar from cornstarch. I did considerable work in the formulative stages of that corporation. I made reports to the promoters. The proposed plant of the Company, that was not built because of the fact that war activities terminated, and the economic conditions so changed that the project was dropped.

Incidentally and incident to my employment by The Indian Sugar Corporation I appraised two breweries. The appraisal was made for the contemplated purchase by the Corporation, to convert the breweries into sugar product plants. One of the breweries was the Hennepin Brewery in Minneapolis. The other brewery that I inspected and reported on was The Eagle Brewery in Elgin, Illinois. While

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[fol. 541] that work was in progress I was sent for by a representative of The Kelsey-Brewer organization, public

utility manager, who at that time controlled and operated The Wisconsin & Minnesota Electric Light & Power Company. They were seeking a general manager for their Wisconsin and Minnesota property. The negotiations proceeded to the point——

Q. I would like, Mr. Allensworth, if we can possibly do it, to have you limit your answers to what you did and not what they, or anybody else other than yourself, did. I am trying to get simply your employment and how you occupied your time, not what other people did. A good deal of the time here has been spent in telling what other people did. I apologize, too, but I must try to insist upon getting your part of it rather than theirs.

Mr. Huffman: Well, this is all bound up with his employment.

The Witness: Continuing, this organization of public utility managers was seeking a manager, a general manager for its Wisconsin and Minnesota property and it was my understanding that the Board of Directors would meet, I think it was on the 8th day of August in the year 1922, and appoint me as general manager of that property and assign one share of stock to me and elect me to the Board of Directors. The meeting was held as scheduled, but before the matter of the management of the property come up for consideration a proposition was entertained to sell that property to the Billesby organization of public utility managers. The sale was consummated and I lost interest in the project.

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[fol. 542] I would like to return to my employment in The Columbus Railway, Power & Light Company. Counsel has insisted that I be more specific on things that I did. While employed by that Company I made an appraisal of the interurban line owned by that Company and run from Columbus to Westerville.

Q. Any trench digging in that—pipe laying?

A. That appraisal was accepted by the Board of County Commissioners of Franklin County as the basis of rates of fare that were fixed at the time. Also, during my employment by The Columbus Railway, Power & Light Company I was put in charge of economic studies of the operation of various properties—various divisions of the property. Those studies I made personally.

Returning now to my employment in Minnesota, it was a requirement of that employment that I make exhaustive studies into the actual performance in that locality of trench digging—of backfilling trenches and tamping backfilling; pavement over trenches; excavations for manholes and all kinds of work required in the construction of an extensive telephone property. I may say, with some, I believe, pardonable pride, that the studies that I made incident to those valuations were the most complete and detailed studies of actual performance that had been made up to that time in such a proceeding. My employment in Minnesota, together with the other things comprised——

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[fol. 543] Q. All right, Mr. Allensworth, you may continue if you desire.

A. In answer to a question of yours——

Q. No, just answer the question you were answering?

A. I was recounting some of my experience as an engineer, and I had at the time of recess begun to relate my employment in the State of Minnesota.

Q. Let me correct you, Mr. Allensworth. I am trying to get all of your business experience, all kinds of working experience, not limiting it to any engineering experience.

A. I had stated, I believe, that in my employment by the telephone interests of the State of Minnesota, I had been called in to other matters as an engineer. I may have stated—if I did not, I will speak now—that in that employment I had full responsibility of the valuations made for the Independent Telephone Company, both for rate-making purposes and for purchase and sale. Incident to that employment by the Tri-State Telephone & Telegraph Company, I was consulted on various matters of public utility economics.

There came up the consideration of re-vamping the financial structure of the corporation. I believe largely upon

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[fol. 544] my statements, the decision was reached to issue bonds in a certain amount and that the mortgage under that bond was drawn and upon my recommendation and discussion of the economic effects of a sinking fund in a public utility bond issue, a sinking fund clause was deleted, and the bonds went on the market without the sinking fund provision. Since my employment in the State of Minnesota,

I think I have stated with sufficient fullness in the record already what that employment has been.

Q. Are you through now? Are you through, Mr. Allensworth?

A. I am awaiting a question.

Q. Have you now given to us all of your business experience, working experience down to the present time?

A. I would not say that I have, but I have given all of it that I remember at this time.

Q. Well, then, may I ask you some questions, which I think can be answered yes or no? Were you ever a time keeper?

A. No, sir.

Q. Were you ever a—I have asked you about cost accountants. Were you ever a foreman or straw boss any place except the one Cleveland job?

A. Well, I was both foreman and superintendent in the construction work for twelve years in the City of Columbus.

Q. You have outlined the extent of that work already have you not?

A. Yes, sir.

Q. Were you ever a traffic manager?

A. No, sir.

Q. You have already stated you were not a certified accountant, certified public accountant. What actual experience in accountancy have you had other than in this appraisal work?

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[fol. 545] A. Auditing accounts of various corporations for purposes of cost determination in rate considerations mostly.

Q. What ones, for instance?

A. Well, the Ohio State Telephone Company, the Columbus Railway Power & Light Company, the Tri-State Telephone Company, the Ohio Bell Telephone Company, the Columbus Gas & Fuel Company in 1925, and prior to that, and also the Federal Gas & Fuel Company.

Q. You were never hired by the companies, were you?

A. Oh, yes.

Q. Which ones? Well, outside of the Ohio State and Tri-State and the Columbus Railway Power & Light Company?

Mr. Huffman: That is half of them, that is 50 per cent of them.

Mr. Turner: All right, we will swear you pretty soon.

The Witness: I have not been employed in any capacity by the Columbus Gas & Fuel Company.

Q. Where did you acquire your accounting education?

A. I have acquired my accounting knowledge, education, if you please, through some years of practical inquiry into accounting systems. Specifically, I completed the course known as the Alexander Hamilton Course, a large part of which is devoted to corporation accounting.

Q. That is a correspondence course?

A. I suppose that is what you call it, a correspondence course.

Q. How long was that course, over how many years?

A. Oh, I should say three or four years.

Q. Where were you working at that time?

A. I think that that was started when I was employed by the Ohio State Telephone Company.

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[fol. 546] Q. And finished when?

A. That I cannot tell you, because I do not remember.

Q. Can you tell whether it was two or three or four years?

A. Well, I say that I think that it ran through for four years.

Q. Which one? Three or four?

A. I don't know.

Q. Is there where you derived any technical training?

A. I should call that technical training in accountancy, yes.

Q. Where did you derive your technical education in mechanical and electrical engineering?

A. Primarily from my father, who was a mechanical engineer.

Q. And what age of yourself did your father die?

A. I was past fifty years old when my father died.

Q. And he taught you in what years?

A. Well, I think my education under father in mechanics and physics started when I was probably about 10 or 12 years old.

Q. And ended when?

A. Well, I think about three or four months before he died, and he was about 92, he sat in his chair, a very aged man, and gave me a very interesting lecture on a phase of engineering.

Q. With what branches of mathematics are you familiar?

A. All brances that I have knowledge of.

Q. Is that the only answer you can give me?

A. Well, will you please make the question more specific? What do you wish to inquire about as to my knowledge of mathematics?

Mr. Turner: Read the question.

(Previous question read as follows: "With what branches of mathematics are you familiar?")

A. I am a mathematician.

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[fol. 547] Mr. Turner: Read the question once more and see if we can get an answer.

(Question read.)

A. I am a mathematician. I am familiar with engineering mathematics. I am familiar with statistical mathematics.

Q. Is that the best answer that you can make, Mr. Allensworth?

A. I am familiar with the mathematics of accounting.

Q. Where did you study that?

A. I studied mathematics—you say where?

Q. I think that is what I said?

A. In Columbus and elsewhere.

Q. In any school?

A. No, sir, I studied mathematics as a private study.

Q. Mr. Allensworth, state your business experience now, what position did you ever hold that was not a subordinate one?

A. Well, I don't know what you mean by "subordinate". I suspect that every man in every capacity is subordinate to something.

Q. Is that the best answer you can give?

A. If that is the question you are asking. I have never held any position that I was not subordinate to somebody. I am subordinate in my present position, subordinate to legal counsel for the City of Columbus.

Q. What experience have you had in the manufacture of gas?

A. I haven't had any.

Q. What experience have you had in the drilling for natural gas?

A. I haven't had any.

Q. What experience have you had in the transportation

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[fol. 548] of natural gas?

A. None.

Q. What experience have you had in the distribution of gas of any kind?

A. None.

Q. For what concern were you ever responsible direct for the general management and financial management?

A. Not any.

Q. For whom did you ever make an appraisal for financing a public utility?

A. The Tri-State Telephone & Telegraph Company.

Q. Did you at any time ever use a trenching machine?

A. No, sir.

Q. Did you ever at any time use a backfilling machine?

A. No, sir.

Q. Did you ever at any time use automatic tamping?

A. I don't know that there is such a thing. I never heard of an automatic tamper.

Q. Were you ever in the employ of a contractor?

A. Oh, yes.

Q. I should have probably said, instead of an automatic tamper, a mechanical tamper.

A. Well, a tamper is mechanical. The ordinary tamper is a bar with a flange on the end. That is a mechanical device. I suspect you may be asking me if I have ever used a power tamper. I have not.

Q. What is your experience and observation, can you secure more efficiency in trench work and pipe laying or either under a contractor or without a contractor?

A. I don't know what kind of trenching or pipe laying you are referring to.

Q. Such as you have testified to in this case.

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[fol. 549] A. Oh, in city work? If confined to the city work, it depends on conditions. If a public utility is properly or-

ganized, it should be able to perform such work cheaper than they could have it done by a contractor and perhaps more satisfactory to the utility.

Q. You claim to be an expert, to have the qualifications of an expert witness, in the matter of the value of automobiles, do you not?

A. I stated this morning——

Q. You can answer that yes or no.

A. That never in my experience have I ever stated in my qualifications that I was an expert. I didn't use that word with reference to myself.

Q. What qualifications have you that differ from the ordinary man in the respect of the valuation of automobiles?

A. I am an engineer.

Q. You claim to be qualified to value automobiles without looking at them?

A. Well——

Q. You can answer that yes or no.

A. I haven't done that.

Mr. Turner: Read the question please.

Commissioner Geiger: He says he has not done it. That is an answer.

Mr. Turner: Note an exception.

Q. Do you claim to have a special knowledge as to the value of office furniture and fixtures?

A. No, sir, no special knowledge.

Q. Do you claim to have a special knowledge as to the valuation of pipes of various kinds?

A. I claim to be an engineer. As an engineer I claim that I can properly determine the value of gas pipes in the

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[fol. 550] ground, if that is what you are referring to.

Q. Do you claim to have any special qualifications which would qualify you to give the value of machinery, tools and equipment in general?

A. I have the——

Q. You can answer that yes or no.

A. I have the special knowledge of an engineer in that respect.

Q. Well, what is that?

A. The knowledge of machinery and tools that every engineer should have—that most engineers have.

Q. What machinery have you ever worked with?

A. Well, it is pretty hard for me to say all the machinery that I have ever worked with. I have worked with all kinds of machinery.

Q. Do you claim to be able to design gas holders?

A. Why, I think I could design a gas holder, yes, sir.

Q. Did you ever design a gas holder for anybody?

A. No, sir.

Q. I have asked you about where you did any work in metallurgy, and I have been unable to obtain an answer that I understood. I will now ask you where you got your education, if I may call it such, with respect to the fatigue of metals to which you have testified in this case.

A. My knowledge as an engineer of the physics of metals, and it is a part of that knowledge. An engineer inquiring into the characteristics of metals and the physics of metals, if his inquiry is to any extent comprehensive, will encounter the subject of fatigue of metals.

Q. Have you done any work in mineralogy?

A. No, sir.

Q. Have you done any blow pipe analysis?

A. Oh, yes.

Q. In metals, mineralogy——

A. I don't know what you are referring to by "in min-

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[fol. 551] eralogy," but I have used a blow pipe in different laboratory processes.

Q. You have made no pipe analyses, have you?

A. Oh, yes. One of the simplest ones, I suppose every boy does that is interested in such things, is that of separating mercury into its components. That is done in blow pipe analysis.

Q. Where have you had any laboratory experience that qualifies you to pass upon the question of the crystallization of metals?

A. The ability to pass upon the crystallization——

Q. No, that is not — question. Now, I have asked you where. We will judge that or the Commission will.

Mr. Turner: Read the question, Mr. Walcutt, will you please?

(Question read.)

A. The ability to pass upon the crystallization of metals is not necessarily dependent upon the laboratory.

Q. You claim to be a qualified witness to pass upon the valuation of gas lands, do you not?

A. I have never testified as to the valuation of gas lands.

Q. You have not?

A. No.

Q. Gas leases?

A. I have testified as to the value of gas leases. I can answer you more fully. I think I know what you refer to.

Q. I am referring to Page 3404 of the record in this case, where you said, "I appeared before this Commission as a consulting engineer in behalf of protesting municipalities in the Logan Gas Case." Were you not then referring to your testimony as to the valuation of gas lands or gas leaseholds?

A. Yes, but you refer to my testimony and show me

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[fol. 552] where I made any valuation or appraisal of those leaseholds of the kind you are designating. I did not do that.

Q. You did not do that?

A. No.

Q. Well, if this be——

A. Let me complete my answer, so that the facts will be in the record and not disconnected. What I did, I testified that the cost of the leaseholds as revealed by the company's testimony was in figures $251,000.00, and that in my opinion, the value of those leases was the cost of acquisition there.

Q. Let me ask you if this statement was not made by you at a hearing of the Utilities Committee of the Cleveland City Council, held in Cleveland on February 4, 1931, when you were giving your qualifications and you said:

"And I may say, if you will pardon me, with, I think, some pride, that it was on my testimony entirely, and I say that advisedly, because mine was the only testimony in the record, that the Commission found the value of the Company's leaseholds, these gas acreage leaseholds, to be a very small fraction of what the company contended. The company in that case contended that the valuation of its leaseholds was $14,160,000.00. The Commission found that the fair net value of the used and useful portions of the

leasehold was something like $7,000.00. There was a tremendous difference between $7,000.00 and $14,160,000.00."

A. Yes, I made that statement, and this is the first time I have heard it since I made it, and I now again subscribe to it. I made that statement and it is entirely correct.

Q. You testified this morning as to a garbage plant that was to be built by John C. Herman, or with which John

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[fol. 553] C. Herman had some connection. Was the plant built under your plans?

A. Oh, I think I told you this morning that the project—whoever was represented by Mr. Herman had a contract to take all of the garbage in Newport and the building of the plant hinged upon the acquisition of such a contract in Covington, and that contract was not forthcoming, and the plant I designed was not constructed.

Q. Then the other project in which Mr. Herman acted, was that ever realized?

A. I don't know what you are referring to.

Q. I thought you spoke about another plant that Mr. Herman contemplated the purchase of at Roseville, Ohio?

A. Oh, the purchase of the electric light plant?

Q. Yes.

A. No, what happened there was——

Q. Just no. That is all I want.

A. Well, no. I choose to explain. The reason it was not consummated was that that was in the summer of 1907 and ran into the financial panic of that time, and the negotiations were dropped because of the banking situation during the summer of 1907.

Q. What expense had been incurred in attempting to close that?

A. Close what?

Q. Just what you were talking about?

A. The garbage plant?

Q. No, no, you were just talking about Roseville the last thing?

A. I don't know.

Q. What expense was incurred in the promotion you talked about this morning with which Henry C. Rohr was connected?

A. Henry C. Rohr was an engineer employed by some

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[fol. 554] promoters of a traction line. There was so much expense incurred that several men went broke on it.

Q. You said you were called to various cities for consultation. Name some of those cities?

A. Well, I didn't say anything about consultation.

Q. Well, for engineering advice then?

A. I didn't say that, either.

Q. Well, what did you say?

A. I said that during my terms of employment by the City of Columbus, I was called to various cities as an electrician in matters pertaining to fire and police telegraph and signalling systems.

Q. I want to know the names of those various cities.

A. Mansfield. I happen to remember Mansfield as being one of them. I happen to remember Marion as being one. I have a recollection of Cincinnati, and I don't—I won't say Toledo, but possibly Toledo. Possibly Toledo and some others. Newark may have been in the list. It has been a good many years ago, Mr. Turner.

Q. At Page 3402 of this record, you said:

"For the past 29 years, in fact, since 1902, I have been in responsible charge of engineering work."

Now, in addition to your job in the city, your position with the Ohio State Telephone Company, and the work with the Tri-State Telephone Company, name a single other instance in which you have been in responsible charge of engineering work for any concern, public or private?

A. Well, the State of Ohio under the former Attorney-General was one of them. The City of Columbus.

Q. What was that? Tell me as we go along?

4038

[fol. 555] A. That was consulting engineer in the matter of the state-wide telephone case, and if I was not in responsible charge of the engineering work, I was very much deceived. I thought I was.

Q. Was any part of your valuation accepted by the Commission?

A. I don't know whether there has been or not. I don't know whether that has been decided or not.

Q. You know that a valuation has been found. You know that, don't you?

A. I don't know that a final valuation has been found.
Q. A tentative valuation has been found?

Mr. Huffman: I object to this. The records will speak for themselves on that.

Mr. Turner: It was fine a little while ago to tell you that he had made the valuation accepted by the County Commissioners.

Mr. Huffman: And that is something of which this Commission will take judicial notice. There is no reason for pursuing this. I object to this line of questioning.

Commissioner Geiger: Objection overruled.

Mr. Huffman: Note an exception.

A. I don't know.
Q. You don't know?
A. I have seen in the newspapers that the Commission found a tentative valuation, and I have heard it discussed, but I have not seen it.
Q. Can you name a single instance in which you were ever a valuation engineer in which your valuation was not the lowest?
A. Oh, my, yes.
Q. Well, name one?
A. The valuation of the Cleveland property of the Ohio State Telephone Company.

4039

[fol. 556] Q. For whom were you working at that time?
A. I was employed by the Ohio State Telephone Company.
Q. All right, go to the next one.
A. The valuation that I made of the Minnesota properties first, the valuation that I made for rate-making purposes, was not the lowest; second, the valuation that I made for the sale of properties, that is, where I was representing the seller, was not the lowest valuation.
Q. Any others?
A. There possibly are others. I don't recall. I have made a number of smaller valuations.
Q. In reading this record, I am not clear whether you meant to leave the inference with the Commission that you had made a valuation of either the East Ohio Gas Company's property or that of the Hope Natural Gas Company. What is the fact?
A. I made neither.

Q. In this record at page 3406, you were asked the following question and made the following answer:

"In the statement of your experience, you have referred to previous experience in appraising and evaluating the properties of the Columbus Gas & Fuel Company. When was that?"

And the answer:

"That was in the years 1924, '25, '26 and '27, in which work I made a study and appraisal of the properties of this company, that is, The Columbus Gas & Fuel Company in the 1925 case before the Master in the Federal Court."

Now, are we to understand that that was a single valuation or more than one valuation?

A. That was more than one.

4040

[fol. 557] Q. You submitted more than one valuation in the Federal Court, did you?

A. No, sir.

Q. What use was made of the more than one?

A. I was employed by the City Council, and prior to the time that the rate question got into litigation before the Federal Court, I was required to take to council and council's committee, facts about valuation, about earnings and expenses and all that. I had been studying the property from the standpoint of both value and earnings and expenses.

Q. I ask you again, prior to this present valuation, did you ever make more than one valuation or appraisement of the property of the Columbus Gas & Fuel Company?

A. If you are asking me now about a written detailed valuation, no. I understood your question to be talking about valu[illegible].

4121

[fol. 558] Q. You are not going to tell me yet, the branches of mathematics that you have mastered, are you?

A. I thought I had told you.

Q. I didn't get the branches at all.

A. I will be very pleased to——

Mr. Huffman: Oh, that is all in the record.

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[fol. 559] The Witness: Mr. Turner, if you want to question me about my mathematics, I shall greatly enjoy the examination.

Q. You have been questioned to find out what branches——

A. And I answered you, "Engineering mathematics and statistical mathematics."

Commissioner Geiger: Wait. He has not asked you any questions. This is a mere statement. Don't answer.

The Witness: How?

Commissioner Geiger: No answer required until he asks you a question.

Q. Is there any field of scientific work that does not have mathematics as its basis?

A. Oh, I think so.

Q. Which ones, for instance?

A. Pathology, perhaps.

Q. What else?

A. Astrology, phrenology, palmistry, the field of hypnosis, which is by some recognized as a science. I suspect there are others. I don't happen to think of them.

Q. Those are sufficient sciences for me.

A. I believe that one of our major sciences, the science of medicine, is not based on mathematics. The science of surgery is not based on mathematics.

Commissioner Geiger: Now, let me ask you a simple question. About all the mathematics that is required in making these estimates, is good judgment as to arithmetic and tables in a hand book; you don't use calculus or anything of that sort.

The Witness: I did not in this particular appraisal. I have used algebra. I have used calculus.

Commissioner Geiger: In this appraisal?

4123

[fol. 560] The Witness: In this appraisal I didn't use any of those mathematical instruments.

Mr. Butler: The Company just uses multiplication and addition.

Mr. Turner: We get a lot of division here, too.

Commissioner Geiger: We might say that Mr. Allensworth is engaged in subtraction.

Mr. Butler: That is our only salvation.

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[fol. 561] Q. Well, go ahead then.

A. Request was made that I compare laying and jointing performance upon which my reproduction cost is erected with laying and jointing performances of the George Wehrle study appearing in Gas Age, July the 19th, 1918, and reprinted as LeFax Data Sheet 8-307 issued by the LeFax Corporation September 18th.

The details as to performance of laying and jointing cast iron and threaded and coupling pipe appearing in pages 42 to 52 both inclusive of City's Exhibit No. 66, are identical with performance averages derived from this said Wehrle study.

[fol. 562] However, the detail as to performance of laying and jointing cast iron and threaded and coupling pipe appearing in pages 44 to 52 both inclusive of City's Exhibit No 66 do not completely reveal the gang organization or the gang or man-day performance upon which my unit costs are erected for the reason that my reproduction cost of mains is erected upon the performance of a construction crew varying from 50 to 60 men, according to the size and kind of pipe to be installed.

This crew would open and close the trench and lay, joint

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[fol. 563] and test the pipe, and includes a foreman and night watchman assigned to it and also one-half of the time of a time and material clerk.

For convenience in presenting comparative statements and to simplify the explanation of comparative statement, this crew has been subdivided into gangs to perform each of the major operations involved in the construction of mains, and the foreman, night watchman and clerk have been treated separately from the gangs involved in what I have termed direct labor. No attempt has been made in my exhibits to allocate the foreman, night watchmen and clerks to the gangs performing the different operations. But when this allocation is made, it produces the following performances for laying and jointing, which performances are less as to gang day performance and as to man day performance than that shown in the Wehrle study have referred to.

The following is the gang performances for laying and jointing pipe, that is the gang performances upon which my unit costs are erected.

Cast iron pipe:

6 inch, 387 feet per gang day;
8 inch, 384 feet per gang day;
10 inch, 288 feet per gang day;
12 inch, 270 feet per gang day;
16 inch, 171 feet per gang day;
20 inch, 150 feet per gang day;
24 inch, 138 feet per gang day.

Commissioner Geiger: Now just where do you get all that, Mr. Allensworth; you get it out of your exhibits, but 4165
[fol. 564] how do — know that that is so? Whoever told you that was so? Do you get down to the point that somebody says they laid two feet less of one pipe per day than of another pipe? How do you know that?

The Witness: Why, I know that through studies that I have made of the cost of handling material, and there is a direct relation between performance and weight of material handled.

Commissioner Geiger: Well, do you base it upon the diameter of the pipe or the weight of the pipe per foot or per given length of trench constructed?

The Witness: Both the diameter and the weight. It is not a direct function of diameter, and it is not a direct function of weight, but both factors——

Commissioner Geiger: All right.

The Witness: Produce a greater cost as the size and weight increases.

Commissioner Geiger: Of course we appreciate that but the only thing is where do you get the data that it is going to take just so many feet more or less per day in proportion to the weight of the pipe? Is that calculated?

The Witness: Oh, I beg your pardon. These figures that I am referring to are average figures.

Commissioner Geiger: All right.

The Witness: A larger pipe might have been installed at a less cost than a smaller pipe, but on the average, handling a large amount of pipe, we do know that it costs more

to handle larger pipe than it does to handle smaller pipe, and these figures that I am referring to are average per-

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[fol. 565] formances per gang per day, and it does not necessarily follow that any one particular gang in any one particular day would lay precisely the number of feet that I refer to here.

Commissioner Geiger: All right.

The Witness: Threaded and coupling pipe, both wrought iron and steel:

1 inch, 2442 feet per gang day;
1¼ inch, 2021 feet per gang day;
1½ inch, 1740 feet per gang day;
2 inch, 1306 feet per gang day;
2½ inch, 1009 feet per gang day;
3 inch, 800 feet per gang day;
4 inch, 590 feet per gang day;
6 inch, 369 feet per gang day;
8 inch, 404 feet per gang day;
10 inch, 397 feet per gang day;
12 inch, 352 feet per gang day.

Plain end pipe:

6 inch, 380 feet per gang day;
8 inch, 417 feet per gang day;
10 inch, 411 feet per gang day;
12 inch, 366 feet per gang day;
16 inch, 251 feet per gang day.

At page 3967 of the record request was made for the number of service gangs that would be required to install all services in the inventory in the reproduction cost period. My reproduction cost new contemplates the continuous simultaneous employment of 4.26 service gangs consisting of 14 men and one foreman, and the performance of these

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[fol. 566] 4.26 gangs contemplates the installation of all services of whatever kind, that is full services, curb services or split services at their location as of December 31, 1929, in an orderly construction program.

At page 3976 of the record request is made that I compare the Company's price for wrought iron pipe plus fittings in main*d* and the price the Company used for wrought iron pipe in services. This I have done, and dis-

cover that the Company used for the price of wrought iron pipe in service, the price for the same pipe in mains, which price, in the Company's pricing of mains, includes fittings on mains for 91.65 per cent of the feet of wrought iron pipe in services. To be more explicit, the Company's price for wrought iron pipe in mains, including the cost of fittings on mains, for 1 inch, 1¼ inch, 1½ inch wrought iron pipe, and the amount the Company includes in its cost for services for the same pipe is as follows:

	Pipe in mains	Pipe in services
1 inch	.1189	.12
1¼ inch	.1610	.16
1½ inch	.1821	.18

Actually the Company's price of wrought iron pipe in services includes $1,624.96 of mains fittings.

At page 3977 of the——

Q. Before you leave that subject would you mind putting at this place in the record the rest of the sizes? You only read three I believe.

A. Well, I have only the three here.

Q. Would you mind furnishing the rest of them?

4346

[fol. 567] A. Those three constitute 91.65 per cent of the total feet in services, if I remember the figures correctly.

Q. You have not the figures available on the other sizes?

A. Not before me. They are in the Company's Exhibit I can read them if you pass me the exhibit.

Q. That is all right, go ahead.

A. At page 3977 it is requested that I put into the record of this case the detail from which the Company's average performance of 2.874 cubic yards per man-day for excavation, back fill and tamping is produced. There is an error in this figure in the Company's average performance. The Company's average performance is for excavation, back fill and tamping—that is the performance upon which the Company's reproduction cost is erected—is actually 2.587 cubic yards per man day, and I wish at this point to thank counsel for the Company for directing my attention to that error.

The trench dimensions upon which the Company's unit costs are based, extended by the lineal feet of mains in the

Company's inventory, produces a total of 434816.353 cubic yards of trench. Of this amount 75 per cent. or 326112.26 cubic yards under the Company's program would be performed by manual labor. The Company's manual trench construction gang consists of 12 laborers, one straw boss and one water boy, representing 126 man-hours per gang day of nine hours.

The daily performance by this gang is shown in Company Welker Exhibit No. 6 in terms of lineal feet of trench for each size and kind of pipe and for each of the operations, excavation, back-fill and tamping.

Dimensions of trenches are also shown for each size and

4169

[fol. 568] kind of pipe.

A simple arithemetical computation reveals the cubic yards of trench constructed per day by the gang and the number of man-hours required to construct each cubic yard of trench.

This study of man-day performance upon which the Company's reproduction cost is erected reveals that the Company bases its unit costs of trench work or decreasing performance with increasing width and depth of trench. This requires the computation of a weighted average daily performance and the weighting is accomplished by computing results of performance on each size of trench.

A further factor is included in the inquiry by the fact that the Company specifies that two-thirds of its trench shall be tamped by the use of air hammers actuated by an air compressor, which process the Company designates "Pneumatic tamping", providing a gang therefor consisting of one compressor operator and three laborers. The performance for manual excavation, backfill and tamping upon hours per cubic yard reveals the same tendency towards slower performance in the wider and deeper trenches.

In other words, the Company's hand labor trench performance includes pneumatic tamping of two-thirds of the trench so constructed.

The labor hours upon which the Company's reproduction cost of mains is erected is; for excavation, 656,201.53 labor hours; manual back-filling, 203,825.59 labor hours or man-hours; tamping, 274,333.13 labor hours or man-hours; the total man-hours, therefore, being 1,134,360.25.

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[fol. 569] The total cubic yards of trench in the Company's appraisal is 326,112.26. The total labor hours or total man-hours, that is 1,134,360.25 man-hours divided by 9 produces 126,040.03 man-days.

Dividing that amount into 326,112.26 cubic yards produces 2.587 cubic yards per man-day which is the performance for manual excavation, backfill and tamping upon which the Company's reproduction unit costs are erected.

On pages 3982 and 3982 of the record I am requested to make inquiry as to whether or not the Company's price for paving over mains does not compensate for duplicated excavation costs in the Company's reproduction cost, and to reveal in the record the details of computations relative thereto.

The total cubical yardage of pavement over mains as derived from the Company's Welker Exhibits Nos. 2 and 6 is 10,446.09 cubic yards. The Company's cost of excavation, back-fill and tamping derived from the same sources is $1.75983 average per cubic yard.

Multiplying 10,446.09 cubic yards by $1.75983 produces $18,383.34.

Adding to this the 5 per cent. over-head on labor in the Company's unit costs produces $19,302.50.

Adding the Company's 15 per cent. undistributed construction expenditures produces $22,197.88.

Adding to this amount the Company's claimed percentages for working capital and going concern value produces the amount $25,527.57.

The total amount produced by the differences between the cost per yard of different kinds of paving as shown in 4171

[fol. 570] Company's Welker Exhibit No. 6 and the cost per yard used for the different kinds of paving as revealed in Company Welker Exhibit No. 2, when applied against the total respective yardages of different kinds of pavement, produces the amount in dollars $11,383.98.

Adding to this amount the Company's 15 per cent. undistributed construction charges produces $13,091.58.

Adding to this the Company's claimed percentages for working capital and going concern value produces the amount in dollars $15,055.32.

So that the alleged differences in paving prices does not compensate for duplication of excavation, back-fill and tamping costs in the Company's reproduction costs. Even

if it be assumed that the price for paving used by the Company was intended to compensate for duplicate yardage in the Company's reproduction cost, the difference in paving prices fails to compensate for duplicate yardage by the amount $10,472.25.

At page No. 3999 of the record I am requested to report the number of carloads of pipe—

Mr. Turner. No, no, you are requested to submit work sheets.

The Witness: At page No. 3999 of the record I am requested to report the number of carloads of pipe in my corrected inventory of mains upon which my reproduction cost is erected.

The total number of cars of pipe is 823 cars, which is equal to an average of one carload per day for nine days and two carloads every tenth day through a reproduction period of three years.

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[fol. 571] Mr. Turner: Just a minute now—

Mr. Huffman: That is found at the bottom of page 3999 in which you say, Mr. Turner, "Will you look at your working papers, please, and tell me how many cars of the various kinds of pipe you would order for this job?"

Mr. Turner: We want the working papers.

Mr. Huffman: You didn't say that; you said, "I want the cars."

Mr. Turner: All right, we won't argue that.

Mr. Turner: There is nothing to argue about there.

Mr. Turner: Go right along; go right along; we will stand on the record.

Mr. Butler: There is no room for you on the record.

Mr. Turner: Well——

Mr. Butler: All right.

Commissioner Geiger: Is what you are submitting the foundation of your estimate to which you have testified?

The Witness: Yes, sir.

Commissioner Geiger: I mean have you any other thing on which you base your judgment than that which you are now giving?

[fol. 572] Mr. Allensworth testified on Redirect examination as follows:

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[fol. 573] Q. On page 4007, the sixth line from the top, there appears the question as follows: "I did not think so. Now, you quit school in the second grade; did you go to work right away? And your answer was: "Yes, I quit school to go to work." If the question as it appears in the transcript is the question that counsel intended to ask, would your answer be correct?

Mr. Turner: That should have been "high school."

Mr. Huffman: Wall, it does not appear that way in the record.

Mr. Turner: Well, I am correcting it now; second grade of high school.

The Witness: If the question is corrected, then the answer appearing in the record would be correct.

[fol. 574] PHILLIP BURGESS, called on behalf of the City of Columbus, being first duly sworn, testified as follows:

Examination.

By Mr. Huffman:

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[fol. 575] Q. You may state your name.

A. Phillip Burgess.

Q. Where do you reside, Mr. Burgess?

A. Columbus, Ohio.

Q. Are you connected with any firms in the city?

A. Yes, sir.

Q. With what firms are you connected?

A. I am connected with two firms; one, the firm of Burgess and Niple, and the other the Burnip Construction Company, contractors.

Q. What is your profession?

A. Engineering and contracting.

Q. Do you have a business in addition to that profession?

A. I consider contracting is more of a business than a profession.

Q. You are engaged in the contracting business?

A. Yes, sir.

Q. Will you please state your experience and qualifications as an engineer?

A. I graduated in 1899 at the Massachusetts Institute of Technology, in the Department of Sanitary Eigineering

and have been engaged in the practice of civil and sanitary engineering continuously since that time.

I am the senior member of the firm of Burgess and Niple, and have been for 13 years.

As engineers, we have been retained, particularly on water works design and construction and operation, at

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[fol. 576] Sharon, Pennsylvania, Beaver Falls, Pennsylvania, Geneva, Willoughby, Conneaut, Shelby, Delaware, Eaton, Grandview Heights, Marble Cliff, Athens, Logan, Nelsonville, Mansfield, Marion, Lancaster, Jackson, Pomeroy and Middleport, in Ohio; at Williamson and Benwood, in West Virginia; at Kankakee, Illinois; Springfield, Missouri; Plattsmouth, Nebraska, and Biddeford, Maine.

At those towns that I have mentioned, we have been employed in matters principally of design and construction.

In addition, as engineers on appraisal work, I have been retained at Chillicothe, Circleville, Jackson, Washington Court House, Pomeroy, Middleport, Delaware, Shelby, Marion, Xenia, Woodsfield, Bucyrus, Upper Sandusky and Tiffin, Ohio; in Pennsylvania at Sharon and Beaver Falls; in West Virginia at Princeton; in Illinois at Kankakee; in Missouri at Springfield; in Nebraska at Plattsmouth; in Colorado at Leadville; in Arkansas at Texarkana.

I am a member of the American Society of Civil Engineers and have been for approximately 20 years.

Q. Your experience has been, as an engineer then and as a contractor as well?

A. Yes, sir.

Q. Which group of towns to which you have referred there in your statement of experience, relate to contracting work?

A. That is all engineering and I have another list of contracting employment.

Q. Will you please give your experience as a contractor?

A. I have been engaged in construction work as contractor since 1919. I have built improvements at Shelby, Eaton, Piqua, Camp Perry, Vermillion, Norwalk, Delaware, Westerville, Crooksville, St. Clairsville, Berea, Leroy, Wil-

3735

[fol. 577] loughby, Jefferson, Girard, Struthers, New London, Mansfield and Batavia, Ohio; at Warsaw and Marion, Indiana; at Kankakee, Illinois; at Springfield, Missouri; at

Sharon and Beaver Falls and Wernersville, Pennsylvania.

Q. How do you spell that?

A. W-e-r-n-e-r-s-v-i-l-l-e. I do not recall whether I mentioned Rome and Wyoming, Ohio or not, and at the Columbus Country Club adjacent to Columbus. In addition, I have bid a large number of other jobs on which we were not successful bidders but from this bidding and contact, I became familiar with construction costs at many of the locations I mentioned.

Q. Have you done work for Grandview?

A. Yes, sir, as engineers, we have had charge of about $750,000.00 worth of work for Grandview.

Q. How recent were your experiences at Grandview; I presume you refer to Grandview located just outside of Columbus?

A. Yes, sir; our employment has been continuous there since I think about 1911 and we have employment there this year.

Q. And when did you work at the Columbus Country Club?

A. This spring.

Q. What was the nature of that?

A. In installing a fairway sprinkler system on the golf ground.

3736 and 3737

[fol. 578] Commissioner Geiger: It was not brought out, so far as I observed in the testimony as to what particular nature most of these contracts were; can you state broadly whether they were contracts for public improvements like laying gas or water pipes or what they were.

By Mr. Huffman:

Q. Mr. Burgess, you may state the nature of your contract work and your engineering work in relation to the various plants in the several towns to which you have made reference.

Commissioner Geiger: Not too much in detail.

The Witness: In a general way, the engineering employment has been principally on water works improvements, including matters of supply and distribution, and the appraisal work was on water works properties. As a contractor I have built largely water works improvements and

also some sewage treatment plants. The work at Medina, Ohio and Morain City, which is just outside of Dayton, were sewage treatment plants. The others were practically all water works.

Q. Did your necessary work in connection with practically all of these plants include trenching, that is excavation and backfilling and tamping and the laying of pipe?

A. There was some pipe work in connection with all of this work.

Q. That is, the laying of pipe?

A. Yes, sir.

Q. And did that include the laying of pipe in city streets?

A. In some cases. For instance the job at Rome was a complete water works job. That is a little town outside of Columbus. Most of the pipe laying work has not been in city streets; it has been in conjunction with pumping stations or similar properties.

Q. But some of it has extended to pipe laying in city streets?

A. Well, I wouldn't call Rome a city; it is a town.

Q. Yes, but in some of these other towns you have had some laying of pipe in streets?

A. Yes.

3743 and 3744

[fol. 579] Q. Have you had experience organizing gangs of this nature and supervising them?

A. Yes, sir.

Q. Have you so organized your gangs so as to get a complete performance?

A. Yes, sir. This performance——

Q. Proceed.

A. This performance is based also on observations of a gang working in Columbus today.

Q. What observation do you refer to?

A. The installation of cast iron water pipe in East Broad Street. I have taken the gang organization on that particular piece of work several times and naturally find that the gang organization varies slightly. The organization that I have set up, though, on page 1, corresponds very closely with the average organization on this gang working on East Broad Street today.

3746 and 3747

[fol. 580] By Commissioner Geiger:

Q. I noticed yesterday in passing out East Broad Street, that they were laying some water pipe, and it appeared to be about ten inch pipe——

Mr. Turner: Sixteen, Your Honor.

Q. Is that done by private contract or by the city, or do you know?

A. That is being done by the City Water Works Department. That gang is the gang that I referred to this morning in my testimony.

Q. That gang is according to your set-up on this page?

A. Yes, only, of course, you will notice that I have changed as I go along, the pipe handling or installing pipe gang. Now, under the sixteen inch pipe I have fourteen; under the six inch pipe, I have four.

[fol. 581] Mr. Burgess testified on cross-examination as follows:

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[fol. 582] Commissioner Geiger: All right. Cross examine, Mr. Turner.

Mr. Turner: Thank you.

By Mr. Turner:

Q. You have bid a million and a half dollars of work in how long a time?

A. The last two years.

Q. How much have you got of it?

A. Oh, I would have to figure that back. We have around 400,000.

Q. Where did you ever do any trenching work in territories similar to that part of the city of Columbus bounded on the north by the Depot, on the south by the Court House, on the west by the River, on the east by Fourth Street?

A. Personally, I haven't done that, but I am familiar with work of that character.

Q. In Columbus?

A. Not in Columbus, no sir.

Q. How many utilities are there in that territory occupying the ground?

A. Why, I would have to add them. There is the telephone company, the gas company, the water department of

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[fol. 583] the City of Columbus, storm sewers and sanitary sewers, electric conduits. I can think of those right away.

Q. Telephone?

A. I mention that.

Q. A. T. T.; Postal Telegraph?

A. Yes, they are there.

Q. Did you take them into consideration in figuring your price?

A. Yes, sir.

Q. What do you figure is the price per cubic yard for the trenching work such as would be done in a gas construction in this territory to which I have referred?

A. The figure that I have used is an average figure.

Q. Oh, no, listen to the question and please answer the question. I know what you have testified to.

(Question read.)

A. I haven't made such a figure.

Q. How then would you get an average figure without getting the figure first, or at some stage of the computation?

A. Because of my experience of similar work in my acquaintance with costs of similar work in other places.

Q. Well, take the whole United States, where have you done similar work?

A. I answered a minute ago that I hadn't, but I was familiar with costs of such work.

Q. Well, give me the job on which you are familiar with the cost.

A. Springfield, Missouri.

Q. What kind of work is that?

A. Pipe laying and trenching.

Q. Is Springfield, Missouri, a comparable city to Columbus?

A. Oh, yes, the excavation work and the character of material there is harder to dig than it is here.

Q. It is a larger city, is it?

A. No.

3779

[fol. 584] Q. Just a little town?

A. Just a minute. The character of material that you handle is much worse than it is here and more expensive to dig.

Q. Why?

A. Because you get down below the surface there and you get into what they—it is a red sandstone with quartz, and it is very hard to dig. I am familiar with the cost for the past ten years on trenching, and I am also familiar with costs of Sharon, Pennsylvania and of Beaver Falls, Pennsylvania. I have had the cost records of those companies for several years.

Q. Well, but I am not talking about any cost records that you may have, I am talking about work you did.

A. You asked me the cost of work that I was familiar with.

Q. Yes.

A. All right, I am telling you.

Q. Is that all you have got to answer to it?

A. No. Other costs, I am familiar with; Kankakee, Illinois, I have seen their costs covering a period of years.

Q. I am trying to get from your experience as a contractor, and I want to know whether you ever had experience as a contractor in laying pipe or in digging trench comparable to the territory between the depot and the Court House, Fourth Street and the River.

A. Well, my answer to that would be this; as a contractor I am required to go out and figure work in towns that I never saw before, and I have to get familiar with conditions and make an intelligent estimate of cost of work in towns I have never seen; and I take into consideration the classification of the material, the labor rate, and the scarcity of labor or what not from which I can make an intelligent estimate in my opinion as to the cost of work in a community

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[fol. 585] such as you mention.

Q. Then give us an intelligent answer of the cost of the trenching in the territory that I have described?

A. Well, I would have to make some study of that to get at the detailed set-up as to that particular locality.

Q. Well, then, take the west side; tell me what it costs over there?

A. What part?

Q. The whole west side?

A. No, that would differ. My average figure would apply to that.

Q. We want to test your average figure.

A. The only thing I can answer is, I would have to pick out one particular locality——

Q. Well, take it up Central Avenue, from the River to Central Avenue, all of the west side?

A. Well, what about it?

Q. You don't understand the question?

A. Is there a question?

Q. I thought so.

A. About what?

Q. The same thing that we have been talking about here, Mr. Burgess; the cost of trenching and pipe laying over there; give me some unit costs for that territory?

A. Covering the average costs along that territory, would be slightly higher than my average figure.

Q. Well, let us take the Hilltop, what about that?

A. The Hilltop would be about my average figure.

Q. Well, now, what would be the actual figure to the Hilltop; that is in the territory between Central Avenue and the River?

A. Well, you are asking me to do something I have just told you I wouldn't do.

3781

[fol. 586] Q. What is the cost of trenching and pipe laying in that part of Columbus south of the Court House?

A. Something lower than my average figure.

Q. What is it?

A. Well, it would probably run ten per cent. lower than my average figure.

Q. Have you got any work sheets on it?

A. No, sir, I haven't.

3784

Q. Now, what kind of construction have you done that is comparable to the building of this gas plant?

A. Trenching and laying of pipe.

Q. Where?

A. Well, in all those places that I read this morning.

Q. How many miles of it?

A. That would be hard to say.

Q. Over how many years?

A. In a period of 15 years.

Q. How deep was it laid?

A. Generally four foot covering.

Q. Water or gas?

A. Water.
Q. Paved streets or not?
A. Not.
Q. Have you done any work in paved streets?
A. Yes.
Q. Where?
A. Just outside of Columbus.
Q. Rome?
A. Yes, sir, and other places.
Q. Rome and other similar places?
A. Well——

Commissioner Geiger: Rome and London.

Mr. Turner: No, he hasn't said London. I will admit London has some paved streets, but I have been upon that main street of Rome.

Q. So you offer Rome, Ohio, and Rome isn't even an incorporated village, is it?
A. Frankly, I don't know.

3785

[fol. 587] Q. A cluster of a few houses out here in this county on the National Pike, isn't it?
A. Well, that is——
Q. Is that the place?
A. Yes, that is the place.
Q. And that is the place where you have done trenching in paved streets; fine.
A. That doesn't mean that is all the work I am familiar with, however.
Q. I am trying to get the work that you have done. I backed a contractor once; and that is the reason that makes me a little suspicious. Do contractors ever lose money?
A. Oh, yes.
Q. Is it rather the rule than the exception for them to lose money on these jobs?
A. Why, it is the rule for an engineering contractor to lose money, if you want to put it that way. Here is where the engineer and contractor differes; the engineer in making his estimates puts too much time into details rather than performance.
Q. Yes, go ahead.

A. That is why he don't know what performance should be, and he is not able to check up on his work, and know whether he is getting proper performance; he puts too much time on little details.

Q. Now, in what part of the City of Columbus would you start to build this plant?

A. I would start in several places.

Q. Well, for instance where?

A. I would start where the mains come in to the distributing system; that would be one of the places. I would start so I would get my plant into service as soon as I could.

Q. Well, would you start in more than one part of the city at once?

A. Yes, sir.

Q. What effect would that have upon your supervision?

3786

[fol. 588] A. Oh, I would have superintendents in charge of the different gangs.

Q. Have you ever had a gang of 111 men?

A. Oh, yes.

Q. Where?

A. Springfield, Missouri; we had considerably more than that.

Q. When?

A. Year before last, 1929.

Q. In Ohio have you ever had any?

A. I would have to look over our payrolls. I can't answer that.

Q. Now, all of this pipe coming in on the New York Central?

A. No.

Q. Don't you think that before you are able to pass upon the question of the length of time that it would take to install this pipe with your gangs, that you ought to have a

3787

[fol. 589] program?

A. No, sir, I have a program of the gang on several gangs, so that I know what the performance would be, and I have taken in my mind a performance of only 200 days a year, which I know is reasonable.

Q. Where have you had 200 days on any one job in a year?

A. Oh, a good many jobs.

Q. I only asked for one.

A. We worked over 300 days for instance at the last job we handled at Springfield, Missouri.

Q. What year.

A. That was in '29.

Q. Machine work there?

A. We had a trenching machine on that work.

Q. How much of that did you do by trenching machine?

A. We used that trenching machine there for excavation in the river bottom.

Q. Not in the City Streets?

A. No.

Q. Didn't you use a trenching machine in any of the City Streets at all?

A. Not on that job, no.

Q. In how many parts of the City of Columbus have you done trenching work?

A. In the City of Columbus, proper, I haven't done any.

Q. In how many parts of the City of Columbus have you done any kind of constructing work that was in the street?

A. In Columbus, proper, I haven't done any.

Q. In Columbus, Ohio, in what part of the city have you done any work that brought you in contact with the soils of the city?

A. Is that in Columbus, you say?

Q. Yes, sir.

A. I haven't done any work that has brought me in contact with the soils.

3788

[fol. 590] Q. How long have you been employed in the city in this matter.

A. About a week.

Q. You have been employed longer than that, haven't you?

A. No, sir.

3789

[fol. 591] Q. Upon what days did you check the East Broad Street construction to which you have referred?

A. Oh, covering a period of about two weeks. I did that before I got into this thing, and carried it on after I was in this proposition.

Q. I would like to have the specific dates on which you checked that job.

A. I don't know whether I can give them to you or not, frankly.

Q. I would like to have your memoranda of the results of checking that job?

A. I have some of those. Just how many—I think I have got either five or six at the office. I haven't got them here.

Q. I wish that you would bring them in, and if possible, fix the days, that is the days of the week or month?

A. I can do that.

3790

[fol. 592] Q. What price have you figured in in your unit cost for the hauling of the various sizes of pipe?

A. The haulage price that I used on cast iron was included in the price, that I used, because I took the price paid in Columbus which included a haulage cost.

Q. Please listen to my question.

Mr. Huffman: I would like to have his answer completed.

Mr. Turner: I would like to have him answer my question.

The Witness: I hadn't finished. The wrought iron and

3791

[fol. 593] steel pipe I have taken at a haulage cost of $2.00 per ton.

Q. How many lengths of eight inch pipe would you put upon this truck then?

A. I wouldn't haul it. As I said before, I would contract to have that hauled. I find in my experience that this truckage work can be done cheaper than I can do it.

Q. Who gave you that bid of $2.00 a ton?

A. Nobody.

Q. That is just an imaginary figure then, is it?

A. Oh, no, sir, it isn't.

Q. Well, I want to know what is back of it.

Mr. Huffman: Let him complete his answer.

Mr. Turner: If he hasn't completed his answer, let him complete it. I want him to complete it.

The Witness: That is not a guess.

Q. Well then, give us the size of the truck.

A. Well, I don't have to. I told you——

Commissioner Geiger: He doesn't have to do that. If he makes a contract with a man to haul the stuff to deliver it on the ground at $2.00 a ton, that is all he is concerned with. If he can get a man to haul it for $2.00 a ton, all well and good, whether he hauls it on a one ton truck or two ton truck.

Mr. Turner: Note an exception. What is the use of cross-examination here?

Commissioner Geiger: What is the use of taking a lot of time uselessly, Mr. Turner?

Mr. Turner: I am not taking time uselessly. I am trying to find out what is the basis of the $2.00. He has got no quotation from anybody, and I want to find out how and submit it to contractors——

3792

[fol. 594] A. I told you several times that I hadn't figured the size of the truck and I don't care the size of the truck.

Q. Well, give us the contractor that offered to deliver it at that price?

A. I haven't any such contractor.

3793

[fol. 595] Q. Give us the five delivered——

A. But I know from experience that I can get that hauled for $2.00, possibly $1.50.

Q. Oh, 75 cents?

A. No, $1.50.

3797 and 3798 and 3799

[fol. 596] Q. What I am getting at is, whether or not you could as a contractor, rely upon getting shipments with sufficient regularity as to have no storage whatsoever.

A. I don't believe you could.

Q. You don't believe you could?

A. No, sir, for this reason; and I might explain that. I believe you would find cars coming in in bunches, and your installation work might be held up by the weather or what-not in such a way that you couldn't expect to have the pipe go on the line just as it comes in. It can't go into the trenches in that way.

. . . . . .

The Witness: Table 6. The laying and jointing, I have taken on the basis of a cost per ton, and I have made a set-up

on a crew—I haven't that with me, but I find in my experience as a contractor that the safest way of figuring work of this kind is on a ton basis.

Q. But we would like to have the factors that make up this $6.00 a ton?

A. Well, the factors are the crew handling the pipe.

Q. And how many a day?

A. The different sized pipes?

Q. Yes; have you got that in this Exhibit any place?

A. No, it is not. I made that up on a ton basis which is a contractor's basis factor, and is the basis on which we frequently figure handling pipe.

[fol. 597] Q. You have told me that several times, but I am asking for facts?

A. I am not through. Last evening, I had the Exhibit of the Company before me, and as a matter of interest, I compared the costs of handling the wrought iron pipe and steel pipe on a per foot basis, and I was very much surprised to find that our figures or their figures, rather, checked mine. For instance, here is the way they run. Going back to Table 6, the cost of laying and jointing of a 12 inch pipe in my set-up is .181; the company set-up is .181, and on ten inch, theirs is .142 and mine is .142 and so on along. I didn't know what the company's figures were when I made up mine, but they agree practically exactly.

Q. The company didn't do it on the basis of a ton, did they?

A. No, sir.

3802

[fol. 598] Q. Have you ever laid any screw pipe?

A. Yes, sir.

Q. Where?

A. In connection with nearly all our work we have considerable screw pipe; I cannot give you the names off-hand.

Q. Just one place.

A. At Kankakee.

Q. How much?

A. Oh, something like $2,000.00 worth.

3803

[fol. 599] Q. What kind and sizes?

A. From ½ inch up to 4 inch, I think was the largest.

Q. Was it wrought iron or steel?

A. Wrought iron.

Q. Did you ever lay any steel pipe any place?

A. I don't think so.

Q. Did you ever lay any plain-end pipe any place?

A. I can't answer that question; I don't recall any right now.

Q. Are the labor performances shown on page 1 of Exhibit 68 to be found in any hand-book?

A. No, sir, not to my knowledge; if they are that would be a pure accident.

Q. What formula do you use for translating the work on the East Broad Street job to Table 1 of City Exhibit 68?

A. What formula?

Q. Yes.

A. No formula.

Q. Well, the water pipe on East Broad Street is 16 inch pipe, isn't it?

A. Yes, sir.

Q. And the pipe that you contemplate laying in your table No. 1 is a 6 inch cast iron pipe, is it not?

A. It is all sizes of cast iron pipe.

Q. I am talking about page 1.

A. It is a 6 inch pipe, yes, sir.

Q. You don't think there was any translation necessary or any formula necessary?

A. No, there is no formula; there is no formula that can be applied to that class of work, to my knowledge.

Q. What I am trying to get at is how you used the basis of the installation of the 16 inch water pipe on East Broad Street to produce the figures on page 1 in regard of 6 inch cast iron pipe—gas pipe.

A. Well, I have not done that and I have not used the

3804

[fol. 600] set-up on the labor on Broad Street.

Q. Well, then, I misunderstood you; you said at page 3743 of this transcript in answer to Mr. Huffman's question: "This performance is based also on observations of a gang working in Columbus today"; now, what gang was that?

A. That is the gang that you refer to. I will have to make that clear; I would like to explain that.

Q. Oh, sure; we want you to have the benefit of any explanation, Mr. Burgess.

A. All right, I will be glad to give it to you. The only information that I took from my observations of the work

on Broad Street was with respect to the organization of the gang and I found that that organization, naturally, differed materially from time to time as I had inspected it and my set-up in this Exhibit is not based entirely on that; it is based upon my experience and upon performance with which I am familiar.

Q. Did you get the performance of the East Broad Street job for any day or days or parts of days?

A. I would not be interested in that.

Q. Well, the question is whether you got it.

A. No, sir.

Q. Did Mr. Bull take any data that he submitted to you in respect of gang performance out there?

A. I did not ask him for any and he did not give me any.

Q. Have you the data taken from that job? We asked you to bring that in this morning.

A. I have never seen any data in regard to that job.

Q. All you know is what Mr. Bull told you?

A. No; he told me in regard to the cost of pipe that the City of Columbus bought.

3805

[fol. 601] Q. Oh, I beg your pardon; who did the work for you in making the observation on the East Broad Street job; did you do that yourself?

A. Partly, and Mr. Bull also.

Q. Well, that is what I asked you about; I thought that I asked you about him in reference to the East Broad Street job; what information did he give you?

A. He gave me a pencil memorandum of the labor organization on that work in several instances.

Q. No performance?

A. No, sir.

3820

[fol. 602] Q. What is financing?

A. The financing on this job would not be in here.

Q. You said it would be in submitting your figures for the Company before, didn't you?

A. I would like to make a statement on that if I may.

Q. You can answer my question and then make your statement.

A. All right; I don't recall, but I will explain that statement——

Q. Please answer my question.

A. I did—I don't recall.
Q. If you don't recall how can you explain?

Mr. Huffman: He can explain his answer.

The Witness: I can explain what I did for the Company and how I prepared the statement. During the previous case I was called in by the Gas Company to check up the costs of laying, such as I have done here. I was shown the Exhibits of both the Company and the City and I was asked to make a memorandum as to costs, taking care of certain overhead or certain percentages that had been added to the cost of the work and I made such a statement, which I no longer have. But that statement was made primarily to see what set-up would be required in the way of overhead percentages, regardless of whether they were in the original costs or not.

Q. Who asked you to take care of anything?
A. Did I say "take care of anything"?
Q. I think you used those words.

3821

[fol. 603] A. Will you read my answer, please?

(Answer read.)

Mr. Butler: Your inference was wrong, you see, General.
Mr. Turner: Well, I don't think so.

By Mr. Turner:

Q. Who made the request for you to make this estimate?
A. Mr. Dening.
Q. Mr. L. B. Dening?
A. Yes, sir.
Q. Did you talk to anybody else?
A. I think I talked with Mr. Welker about the matter.
Q. Anybody else?
A. There was an attorney from Pittsburgh, I don't recall his name; he was present during part of the conversation.
Q. How many conversations did you have with them?
A. I had two or three, I don't recall just the number.
Q. Have you got a copy of that paper submitted by you?
A. No, sir, I have not.
Q. You did not keep it?

A. No, sir; it was simply a memorandum, and as a result of our conversation I told Mr. Dening I could not do him any good.

Q. You made up the statement, however?

A. Yes, sir; it was simply a memorandum; in fact, I have not kept it.

Q. Did you use any gangs there?

A. I probably did.

Q. Were they the same as you are using here today?

A. No; I took the Company's gang at that time.

Commissioner Geiger: To get it a little clearer, just on this matter, did they seek you out and employ you to give an estimate?

The Witness: They asked me if I could help them on the thing, and gave me their Exhibits to look them over.

3822

[fol. 604] Commissioner Geiger: Now, in the figures that they gave you, did you have this 10 per cent added in the figures?

The Witness: They had a lot more than that, frankly, they had some costs set up with considerable percentages and my memorandum was made to try to see what these percentages were, as I recall.

Commissioner Geiger: Well, was it in this case we now have under examination?

The Witness: It was in the former gas case.

Commissioner Geiger: The Federal Court case?

The Witness: Yes, sir.

Commissioner Geiger: Well, the result, as I understand from your testimony, was that they brought certain figures to you which they, themselves, made up and asked whether or not you could be of assistance to them or testify in support of their figures.

The Witness: Yes, sir.

Commissioner Geiger: And you told them you could not do them any good.

The Witness: Yes, sir, for this reason——

Commissioner Geiger: Well, wait a minute; and thereupon you were not employed by the Company and somebody else was?

The Witness: No; I think that the case—the hearings were discontinued about that time, for what reason I do

not know, but in a general way it is a matter of percentages and——

Commissioner Geiger: Well, let us clear this thing up first; you told them you could not do them any good on the figures they submitted to you.

The Witness: I told them I could not substantiate their

3823

[fol. 605] percentages that they had added to costs of work—field costs.

By Mr. Turner:

Q. But you were submitted not only the Company's Exhibits but the City's Exhibits, were you not, and didn't you just so state a little while ago?

A. I saw only one Exhibit from the Company, as I recall now.

Q. Only one Exhibit from the Company?

A. No; from the City, I mean.

Q. Well, that was Allensworth's Exhibit, wasn't it?

A. I suppose it was, yes, sir.

Q. And then you got up the estimate based on what?

A. On what percentages were necessary to bring up certain percentages above field costs.

Q. Well, you were not accommodating the company; you were giving your honest belief, were you not?

A. I was making an investigation as to what was necessary to do that. Now, pardon me, along that line the set-up was something like that; I would like to make this clear; the situation as I found it was something like this; the Company had made a set-up of costs and that cost apparently was not in the City; it was outside the City; and then to those costs were added certain percentages to reduce the cost of City work and that was the thing that, frankly, I was supposed to go along with them if I could and say what those percentages should be. Now, my reply was this, that that was not my method of figuring work. They had figured their job in place and not somewhere else.

Commissioner Geiger: What do you mean by "not in the city"?

The Witness: It was not under City conditions; it was

3824

[fol. 606] figuring it outside somewhere and adding percentages to reduce it to City costs.

Mr. Huffman: That was not out in the country——

Commissioner Geiger: We got all that; let him testify. They brought to you, as I understand, a plan that they had set up of estimating the cost of the construction; is that right?

The Witness: Yes.

Commissioner Geiger: And submitted it to you and you, after examining it, told them you didn't think you could do them any good?

The Witness: Yes, sir.

Commissioner Geiger: And you were not employed?

The Witness: No, sir.

By Mr. Turner:

Q. Then you——

Commissioner Geiger: Well, just one more question; they came to you with that plan already drawn out and estimates of cost to some extent including overheads?

The Witness: Yes, their figures were all completed and had been for some time.

Commissioner Geiger: In other words, as I understand the situation, it was this; they had a schedule or an estimate made out when they brought it to you, asking you to make an examination of it and ascertain whether or not you could appear as a witness to support their estimate, is that correct?

The Witness: That is correct.

Commissioner Geiger: And you, after examining it, said you could not.

The Witness: That I did not substantiate the method in which the work had been done.

3832

[fol. 607]. By Mr. Turner:

Q. Have you brought the details of the laying and jointing costs of $8.00 per ton as set out on page 10 of this exhibit?

A. No, I did not.

3833

[fol. 608] Q. Why?

A. I didn't make any set-up on that; I took that figure as somewhat less than my set-up on the threaded and coupled pipe.

Q. Now what page is that that you refer to now—threaded and coupled pipe?

A. Pardon me, you did not ask me for the amounts on page 10; you asked me for the costs on page 11 yesterday.

Q. Well, pages 10 and 11 both; the $6.00 and the $8.00: well, did you bring the $6.00 analysis?

A. I did not make any analysis except in the way of checking this price; I have not the original figures on that. I made some set-ups and figured the cost per ton and frankly, in my opinion, the cost per ton is the safer way of figuring it.

Q. Let me ask you now; is it common practice to figure per ton for laying and jointing?

A. We figure most of our pipe upon a ton basis.

Mr. Turner: Read the question, please.

(Question read.)

The Witness: It is our common practice, yes.

By Mr. Turner:

Q. Is it common practice among engineers?

A. Not among engineers but among contractors.

Q. What other contractors laying pipe use it around here?

A. Oh, I don't know around here; we have figured nearly all our work on labor either as a percentage of the material cost or as a cost per ton on pipe work. We find by experience that is the safer way to figure it.

Q. Well, we would like to know just how you figure it because we cannot tell anything about it until we know the break-down.

A. I did not bring the detailed break-down.

3834

[fol. 609] Q. Well, we asked you to.

A. Well, I didn't have any. I made a break-down to arrive at these figures. There are some pencil figures as a set-up from which I arrived at the price per ton, but I have not those original figures.

Q. Well, if you did it then can't you do it now for us here?

A. Oh, it might or might not be like what I had; I can give you some figures if you wish them.

Q. Well, give them to us.

A. Which figures would you like first, please?

Q. The $6.00.

A. Well, I didn't make any set-up on that; I have the set-up on the $8.00.

Q. Well, all right, give us the $8.00 then.

A. Well, take a four inch pipe for instance; it would take something like 13 men to handle that, and on a six inch pipe, one more; eight inch pipe, 17; ten inch pipe, 20 men, practically all common labor.

Q. We cannot get much from "practically all" an engineer figures pretty accurately, doesn't he?

A. Well, he tries to.

Q. Well, give us the actual figures, if you will.

A. I did not figure that as an engineer. An engineer would not take the per ton price that I have used, which, however, I consider a better price than some engineers' detail prices.

Q. Well, but we want to get at it so that we can examine it and compare it, and we can't do that unless you break it down for us.

A. I have not the original break-down figures with me.

Q. But can't you give them to us?

A. Well, I made a break-down from which I arrived at my price per ton for certain sizes and I know that all sizes —the costs of this kind of work are in proportion to the weight.

3835

[fol. 610] Q. Well, give us the break-down.

A. I haven't it.

Q. Well, can't you do it?

A. No, I can't do it now. I might give you some figures or might not. Those figures were made before I made up my exhibit and I haven't them—or at the time I made the exhibit.

Q. Won't you make up an exhibit for us showing how you break down the $8.00 per ton for laying and jointing found on page 10 and the $6.00 for laying and jointing found on page 11; not how you would do it but how you did do it to arrive at the figures contained on pages 10 and 11 of City's Exhibit 68?

A. Well, I haven't those original memoranda and——

Q. That is not the question.

A. Well, you have asked me to do something which I cannot do.

[fol. 611] Q. Oh, all right——

Commissioner Geiger: May I ask you this; you have certain tables in which you ascertain and set down at the bottom of several pages, 1 to 5 inclusive, your total cost per foot. Now is there any relation between the total cost per foot of laying a six inch pipe with the amount per ton?

The Witness: Yes, sir.

Commissioner Geiger: Well is that where you got it?

The Witness: In fact Mr. Turner asked me to bring some of our bidding sheets with us on other work and I have set-ups here that we generally bid this on a per ton price.

Commissioner Geiger: Well, this is what I am trying to find out; you have in detail analyzed a break-down, possibly to a greater extent on page 1 to 5, and you have arrived at how much it cost per foot to lay a certain diameter pipe.

3836

[fol. 612] Mr. Turner: Of cast iron pipe; this is different pipe, Your Honor.

Commissioner Geiger: Well, let me ask this, is there any relation between the cost per foot of laying cast iron pipe and the cost per foot of laying wrought iron pipe.

Mr. Turner: And jointing?

The Witness: The relation is in cost per ton in each instance.

By Mr. Turner:

Q. Are the operations the same in the case of cast iron pipe that they are in wrought iron pipe and steel?

A. Not unless the cast iron pipe has the same connections.

Q. Well, does the cast iron pipe have the same connections?

A. In this particular job, no, but in some jobs it has.

Q. What job have you been on that the cast iron pipe had the same ends that the wrought iron pipe has—or the steel?

A. We have used cast iron threaded pipe; I can't recall where it was—not to a very large extent.

Q. Did it have a bell and spigot joint on it?

A. Oh, no. This pipe out here at the Columbus Country Club—we used that for water, but that pipe is also used for gas, the same pipe.

Q. That is cast iron out there, isn't it?

A. Yes; it has a double X simplex joint which is used more for gas than for water. We used it for water.

Q. Is there any bell and spigot on either wrought iron or steel?

A. No, sir.

Q. So that the cost of laying and jointing must necessarily be different from that of cast iron?

A. Oh, yes, unless as I say you get cast iron threaded

3837

[fol. 613] or you can use a plain cast iron pipe as you will find here; you can use a Dresser coupling on a plain cast iron pipe.

Q. What I am trying to get at is that the difference between the pipe that you have figured on in Exhibit 68—what I want to bring out, if it be correct, is that there is no comparison between the laying and jointing of cast iron pipe on one side in this job and the laying and jointing of steel and wrought iron pipe on the other end, in this job.

A. Yes, as a contractor I will say there certainly is.

Q. What difference?

A. The differences are in the gang and in the material. In cast iron pipe you have to add lead and hemp, but you have the same performance of putting the pipe in the trench whether it is cast iron or steel or wrought iron. Then you have to make up your joint. Now in the cast iron you put the pipe in the end of the spigot and pour the joint. Now in the wrought iron pipe you put the pipe in the end of the coupling and turn it up; now there is the difference.

Q. The same crew?

A. No, it takes—you have no lead man and no caulker. You have a different organization but you are doing the same kind of work and it is on a per ton basis in either instance if you care to figure it that way. It can be figured this way as I have frequently done.

Q. Well, that is the reason we are trying to get your break-down of figuring it on a per ton basis. We cannot tell anything about it until you give it to us.

Commissioner Geiger: Can you tell us this generally, what is the difference as to one being more expensive than the other, of laying wrought iron pipe and the cast iron pipe or steel?

3838

[fol. 614] The Witness: On a per ton basis the wrought iron pipe procedure costs more money per ton. Now your

cast iron pipe will run—we figure in other words from $2.75 to $4.00 per ton depending on the size of the job, and your wrought iron will run around $8.00 per ton for screw pipe and $6.00 per ton for Dresser—plain end pipe Dressed coupled. I have set-ups here showing that we figure it on the cost per ton basis.

By Mr. Turner:

Q. Why don't you figure the cast iron on the per ton basis then?

A. Because of the fact that I didn't want to get into it, just what I have here, and that is this; I wanted to show a complete detailed crew organization, and from that I could figure performance and costs of the different parts of the work. Now if I was bidding this job for myself I would not necessarily go through this complete set-up. I would take the pipe handling on the per ton basis as I have done repeatedly and as I have in some set-ups I have here.

Q. Why didn't you follow the same procedure in respect of steel and wrought iron pipe?

A. Because the same thing as I have done with the excavation and backfilling; I figured my unit prices based on my gang in Table 1 and then I have simplified the thing by applying my per ton price to the handling of the pipe. I tried to simplify the thing and figure it in a way frankly that is more apparent to me.

Q. Well, it may be more apparent to you, but we understand you to say that the crews are different.

A. Yes, sir.

Q. The crews are different?

A. Not so different as you might think.

Q. Well, if there is any difference it makes a difference in cost, doesn't it?

3839

[fol. 615] A. A slight difference; I gave you the crew with two or three sizes of pipe that I would use on the threaded and coupled pipe.

Q. You have never laid any of that, have you?

A. Yes.

Q. Where?

A. Not a great deal in a street but we handle that kind of pipe repeatedly; I have seen a good many operations on properties I am interested in.

Q. Where?

A. Wrought iron pipe is used——

Q. Where?

A. On small extensions, in most waterworks plants such as Sharon, Beaver Falls and Springfield, Missouri. I have there a detailed set-up of costs on that kind of pipe and I have seen the operations and I am familiar with them.

Q. You, in figuring tonnage basis however, you would need crew performance, wouldn't you?

A. I would have to know——

Q. Oh, answer that yes or no and then explain?

A. Before I could make——

Q. No, no, I want an answer yes or no and then you can make any explanation you want; now then listen to the question as read.

A. What is the question?

(Question read.)

A. Before I could make an intelligent bid, yes.

Q. Then before we can analyze your figures here we must have the detail on the crew performance, must we not?

A. Either that or you can compare them with another performance of your own, just as you choose.

Q. But we have no such way, and our engineers tell us they know of no such way.

A. Well, I didn't agree with them. I did compare that with their set-up as I told you the other day.

Q. Well, tell us how; we are here to learn.

A. Simply compare results of the costs.

3840

[fol. 616] Commissioner Geiger: What Mr. Turner wants to know is why you used six and eight dollars per ton; what is the basis of your estimate that it will take to do the jointing?

The Witness: Well, I told him I made some preliminary set-ups of gang performance and so forth and from which I arrived at a per ton cost but I have not those figures, I destroyed them. I would say further that I know from experience that I have set-up detail cost of cast iron from

which anybody can figure the cost per ton for handling the pipe and making the joints. Now I know that handling this wrought iron and steel pipe and threaded joints will cost about two and one-half times as much as the cast iron pipe.

By Mr. Turner:

Q. Now where is your formula for that?

A. In my head.

Q. Well, give it to us; let us take it out and get it on paper?

A. I don't do those things as a matter of formula.

Q. Are they guesses?

A. No, sir, they are not guesses; they are matters of experience.

Commissioner Geiger: Is the wrought iron and steel pipe in 12 foot lengths?

The Witness: No, sir, it comes in what is called random lengths, 20 or 25 feet.

Commissioner Geiger: What do you mean by that?

The Witness: Well, no specific lengths; they are not in exact lengths.

Commissioner Geiger: Do they average more than 12 feet?

The Witness: Yes, sir.

Commissioner Geiger: Well then of course if it is more than 12 feet in length you will not have as many joints as you would in a cast iron pipe that is standard 12 feet?

3841

[fol. 617] The Witness: It will cost you more to make up a joint on wrought iron pipe than it will on cast iron pipe, that is for work and labor.

3843

[fol. 618] Thursday Afternoon Session

July 16, 1931.

And also—

PHILIPP BURGESS, resuming the stand for further cross-examination, continued his testimony as follows:

Cross-examined by Mr. Turner:

Q. Mr. Burgess, you were asked yesterday to produce any bids you made in 1929 on trenching and pipe laying. Have you brought those?

A. I understood your question to be any bidding I made in the last couple of years.

Q. No, I was talking about 1929; but if you have bids in the last couple of years on trenching and pipe laying, all right.

A. I have brought them, yes, sir.

Q. All right, may we examine them?

A. This is a job that we bid on May 11th of this year at Parkersburg, West Virginia.

Q. Pipe laying and trenching?

A. Yes, sir, in city streets. Shall I explain it?

Q. Yes. I would like to have had something in 1929.

A. I understood your question to be the last two years and I simply went back to the last jobs that we had because apparently, I would have to hunt to find the others.

On May 11th, we bid on 14 miles of pipe laying at Parkersburg, West Virginia, and I have our detail set-up here. I also have the final tabulation of bids prepared by Maurice Knowles, Incorporated, who had charge of this work.

Q. What I wanted was something in Ohio. Didn't I limit 3844

[fol. 619] it to Ohio.

A. No, sir, you asked me anywhere.

Q. All right. Ohio would be more informative, and Columbus would be still more informative.

Mr. Davies: Parkersburg is about as near as you could get outside of Ohio.

The Witness: I have one in Ohio here, also.

Q. All right. Would you let us examine it while we are talking about something else, or do you want to talk about it yourself?

A. I might as well complete it now if you don't mind.

Q. I don't mind.

A. Our excavation involved about 24,000 cubic yards. Our set-up on six inch pipe was on a basis of 6.3 cubic feet per foot at 4 cents, or 25.2 per foot.

Q. Water or gas?

A. This is water. Excavation is the same however.

Q. But the cost of the pipe is not the same?

A. I am talking about excavation. By the way, the city had bought the pipe. This bidding is entirely on the installation of the material after the city had bought it f. o. b. cars.

Q. All right.

A. The 8 inch pipe, we took 7.3 cubic feet at 29.2 cents and 10 inch pipe 9.3 cubic feet at 37.2 cents.

By Commissioner Geiger:

Q. Does that compare in any way to any table you have here?

A. Yes, sir.

Q. Go on.

A. Well it has the number of cubic feet per lineal foot of trench and it has the price that we bid per cubic foot.

Q. But which table is it you set that out?

A. It will be under Table 1. Of course, I don't take it out of that table.

Q. I understand.

A. It is our quantity of work and prices that we bid on

3845

[fol. 620] this work. Now, we had to transport this pipe to the trench. We bid this at—our cost, rather, was $1.25 a ton, as we estimate it.

By Mr. Turner:

Q. How far did you have to haul it?

A. Two or three miles.

Q. Which was it, two or three?

A. Well, I can't tell you exactly.

Q. 50 per cent. difference in that?

A. Well, call it two and a half.

Q. Well, I don't want to call it; I want to know.

A. The price doesn't vary with the mileage.

Q. Price doesn't vary with mileage?

A. Very slightly.

Q. Can a trick haul as much pipe in a day hauling a two mile haul as a three mile haul?

A. Not quite, pretty nearly. The handling of the pipe corresponding to the making up of the joints and putting the pipe in the trench, we bid at $1.00 a ton. The materials

the lead and jute, we bid at 5½ cents a foot; calking at 5 cents; testing at 2 cents; a total of 16½ cents. Now those similar unit prices apply to eight inch pipe, ten inch pipe, twelve inch pipe.

Q. What do you mean by similar?

A. The same unite prices, the cost of trenching at 4 cents a cubic foot, the hauling at $1.25 a ton; those were our costs that we estimated.

Q. What did you estimate for incidentals?

A. Nothing.

Q. What did you estimate for profit, nothing?

A. Oh, we got a little profit in there.

Q. What did you estimate for profit?

A. $7,380.00 on the $53,550.00 worth of work.

Q. All right.

A. Pardon me, that is total overhead and profit.

3846

[fol. 621] Q. Now, may we see your exhibit?

A. Yes, sir.

By Commissioner Geiger:

Q. Did you get the contract?

A. Our bid was $53,550.00. We estimated that on the hand work with the specification — had said would apply. The job was sold at $35,355.00.

Q. For hand work?

A. Yes, sir.

Q. What other ones have your in Ohio?

A. Tippecanoe City which we bid on June 12th.

Q. What was the nature of that job?

A. Pipe laying in streets.

Q. Gas or water?

A. Water.

Q. Include material?

A. Yes, sir.

Q. What is the difference in cost; indicate the difference in cost between gas and water?

A. The material is $3.00 a ton for cast iron pipe.

Q. Laying and jointing just the same?

A. Cast iron pipe?

Q. Between water and gas.

A. Leading and joining cast iron pipe for water or gas is the same.

By Commissioner Geiger:

Q. Do you mean digging the trenches the same; don't they dig a deeper trench for water than for gas?

A. No, sir—well, pardon me, yes. But our cost per cubic foot is the same. This was a machine job; the other job was bid as a hand job.

The first item in our set-up was 12 inch pipe. We figured that we would dig and backfill at 25 cents a foot, we would test it at 2 cents a foot. The hauling was $1.50 a ton. The handling of the pipe, that is, the making up of the joints, and everything except material was $1.50 a ton. The labor

3847

[fol. 622] calking was 6 cents a foot. The lead and jute were 9 cents a foot, total cost of $1.84 cents. We added 3 per cent. to that for fittings—or three cents, pardon me, making a cost of 1.875. We added 13 cents to that for overhead and profit, bid it at $2.00.

Q. 13 cents a foot?

A. Yes, sir; bid it at $2.00. The next item is 10 inch pipe——

Q. What was the haul on that; the average haul?

A. Probably two miles.

Q. You say probably; didn't you know at the time you bid it?

A. Oh, that wasn't necessary to know it exactly, no, sir.

Q. All right.

A. Ten inch pipe, next. We bid the pipe at 98 cents a foot—pardon me, these are costs; 98 cents a foot for costs. Digging and back filling 25 cents a foot; testing 2 cents, hauling at $1.50 a ton, handling at $1.50 a ton. Both of those last amount to 4.1 cent a foot. Calking eight cents a foot; lead and jute at 7 cents a foot, a total of 1.482. We added 3 cents a foot for fitting; a total of $1.51, to which we added 13 cents making a bid of $1.64.

Q. A foot?

A. Yes, sir.

Q. Those were both bids in what year? This year. Pardon me, I am not through yet. Eight inch pipe——

By Commissioner Geiger:

Q. Just one minute. This is a collateral matter, and aren't we wasting a good deal of valuable time, by going into detail?

Mr. Turner: Yes, sir; but I asked him to let us examine them.

Commissioner Geiger: I think the better way would be for you to give the total of your footage for the various

3848

[fol. 623] classes of pipe and then let him cross-examine you on the details of it.

The Witness: The only thing was, he asked me to bring in my set-up and show how we made up our prices, and these things, of course are important in showing how we made up our bid, and the amounts that we included in there for cost of doing this work as a contractor. These prices vary. The unit prices are practically the same, as I said before.

By Mr. Turner:

Q. Will you let us look at it?

A. Yes, sir.

Q. Now, you have none for 1929?

A. I didn't look for any, frankly. I don't know whether I had or not. I had very little time and I knew where these were.

Q. Or 1930?

A. I probably have some, but I didn't find any.

Q. What allowance have you made for contingencies such as damage to other utilities property in sub-service construction?

A. Where, please?

Q. Any place in your pipe laying in your Exhibit 68. I am getting back to this case.

A. That would come under my general overheads. It is not in that exhibit.

Q. Have you had any experience with sub structures or structures underneath the ground belonging to other utilities?

A. Yes, sir.

Q. Do you allow anything for damage by one company to another by the operating company to another company's property?

A. If you damage it, you would have to probably make the damage good.

Q. Well, what I am asking you, if in Exhibit 68, you have

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[fol. 624] made any allowance for that?

A. Not as a separate amount.

Q. Whereabouts could we find it all in any way?

A. That is all included in my unit costs of doing the work. I have considered that in my element of progress of the work.

Q. Is that not rather a common occurrence, that you do have such expenses?

A. Yes.

Q. You recently installed, I believe, you said a sprinkler system out here at the Columbus Country Club on the Fairways?

A. Yes, I have some operating information with respect to that.

Q. Just answer the questions as asked, please?

A. Yes, sir.

Q. Counsel on the other side will bring out the rest of it if you don't. How many acres in those Fairways?

A. The Fairways?

Q. Yes.

A. Oh, I would guess 150; 100; 125 probably.

Q. How many miles or feet of pipe did you put in out there?

A. Approximately 23,000.

Q. How many other utilities had their facilities in the ground?

A. There was a lot of drain pipe there. This land has been drained before we put the pipe in, and the drain pipe was above the pipe we put in.

Q. Any gas pipe out there?

A. I don't think so.

Q. Didn't you hit some gas pipe?

A. No, we hit a lot of drain pipe, though.

Q. Didn't you hit some gas pipe and the Columbus Country Club had to send in and have it repaired before they could go on out there?

A. That might be; I don't know.

Q. Well, in other words, I just wanted to develop that

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[fol. 625] even out in a great big field like that, you do have the danger of doing some damage to the other utilities' property?

A. That is correct, yes, sir.

Q. Yes. Now, aren't air compressors frequently rented?
A. Yes; we have rented them.
Q. What do you pay a day for them?
A. The last one we rented, I think we paid $15.00 a day.
Q. And still you have got in your totals at $10.00 a day, haven't you?
A. Yes.
Q. $15.00 a day?——
A. I wouldn't rent an air compressor on this job.
Q. You wouldn't?
A. No.
Q. What would you test with?
A. I would own the compressor; I wouldn't rent it.
Q. Oh, you would own it?
A. Yes, sir.
Q. Let me ask you if it wouldn't be fair to the company to expect to write off all the machinery that was bought in the period of construction?
A. Not necessarily, no, sir.
Q. Why not? They would be through constructing except for extension and betterment?
A. I think the proper way to write equipment off, and the way we write it off, is to put it on a job and figure what it is worth when you get through.
Q. Well, have you done that here?
A. Yes sir.
Q. Whereabouts; on what page have you done that of Exhibit 68?
A. On Page 12.
Q. Whereabouts?
A. I have taken the total life of the machine at five years; depreciation at 20 per cent.
Q. Yes.
A. Which represents one year's performance.
Q. You think you would have a salvage value at the end

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[fol. 626] of the year of 80 per cent do you?
A. I don't say that. That is the value to me at the end of the year as a contractor.
Q. No——
A. Pardon me; there is a difference between sale value and depreciation.
Q. You bet there is; you and I agree on that?

A. Yes, sir.

Q. What I am trying to get at, and I wish that you would direct your attention to it—you are talking from a contractor's standpoint; but your exhibit here is what the company could reproduce this property for. You haven't allowed any contractor's fee there, and you are assuming that the company does it. Now, I want to know if you should not, under circumstances of that kind, figure the sale value, the scrap value, of these machines at the end of your construction period?

A. No, sir.

Q. Why not?

A. Our practice is, and I believe it is general——

Q. No, you get back to your contractor; I am talking about the company now.

A. The practice of the company then is to write the cost of the machine into the job when they start, and to write it out when they are through.

—. Well, that is just it; I take your word for it. At the end of 2½ years, how much would you write off of these two machines that you figure in on Page 12 at $10,000?

A. 50 per cent.

Q. At the end of three years?

A. Two and a half years, you said.

Q. What at the end of three and a half years?

A. It would be another 20 per cent; 70 per cent.

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[fol. 627] Q. You think you have shown that in here?

A. Yes, sir.

Q. Do you think at the end of 3½ years, there would be 30 per cent scrap value in those machines?

A. I think the machine will still operate; it wouldn't be scrap value to me.

Q. Well, what would the company's position be with it; they would simply have to sell it and get out what they could, wouldn't they?

A. No, they would probably keep this machine. They are not going to quit putting in extensions.

Q. But machinery gets out of date, doesn't it?

A. Yes.

Q. I wish you would prepare an exhibit to be introduced in this case showing your unit costs upon which City's Exhibit 68 was constructed. Will you do that?

A. Well, to the best of my ability, they are in this exhibit.

Q. You haven't the ability, do you say, to make it any clearer, than you have it already set forth in Exhibit 68?

A. I thought I made it clear.

Q. Well, you don't answer.

A. If you will tell me in what particular that is not clear, I would be glad——

Q. Well, I have been hammering here during the morning trying to get your breakdown of the six dollars and the eight dollars, laying and jointing of pipe. I have tried to get your breakdown of the $2.00 per ton for cost of hauling. I have tried to get your breakdown of the five per cent. I have tried to get other breakdowns here. And those are the things that we have got to have if we compare your exhibit with ours, to see upon what it is bases.

A. I don't believe I can give you any more information on that.

Q. Let me ask you, Mr. Burgess, isn't it frequently the case that contractors and engineers will differ widely on

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[fol. 628] the cost of some part of the construction, yet when you have tabulated the total figures, there is an approximate agreement?

A. Yes, sir, that is true, of course.

Q. Well, that is just it. There has been taken in this case both in your exhibits and Mr. Allensworth's, certain assum-tions; in other words counsel on the other side have picked out certain items in the company's exhibits and accepted them, and then except other items; and in other words, we don't get either your picture or Mr. Allensworth's picture of a complete structure, of a reproduction. Now, do I make myself clear?

A. Yes.

Q. That is the reason we would like to have your unit costs, so that we can find wherein the difference lies. If there is something left out——

A. Referring to those items that you mention, the item of hauling; we have had trucks and we have done a lot of hauling, and we find we can't haul as cheap as we can get it done, so our practice is to have the hauling done at a unit price. I can read you here what we have figured hauling recently, and it is considerably less than I have allowed in this. And coming back to the set-up of the jointing

and so forth of the steel and wrought iron pipe, I didn't make the set-up on that, but I don't consider that important for this reason, if I may explain——

Q. We would like to have the set-up.

A. The part of my set-up on Page 1, for instance, shows a total cost to me of $359.60. Now, only a small part of that goes into the pipe laying, and my interest as a contractor is more in getting performance than it is in finding out whether my pipe laying is going to cost me $8.00 or $7.00 a ton. Suppose that is a difference of a dollar; that is one

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[fol. 629] dollar in 360. On the other hand, if I have got a performance of 5½ yards in the place of five, I am cutting my costs $35.00 a day, and the $1.00 don't mean anything to me.

Q. You are emphasizing the very thing that in a crude way I am trying to get, that you may cut off of something $1.00 and it might look to the layman like something big, and you cut off a few cents some place else and it is much bigger, but it don't seem so to the layman.

A. Well, I am not talking to laymen.

Q. Well, you can consider me a layman.

A. And I am trying to explain to you what my costs on this thing are.

Q. Well, I am trying to get a rounded cost for a whole job rather than to pick up some things and day, "Well, we will let the company build that, and we will build the rest of it."

Commissioner Geiger: Mr. Turner, if he says he can get pipe hauled for $2.00 a ton, and he does get it, and that is his experience, has he any more concern about the breakdown of what the $2.00 per ton is than you would have if you could get certain freight rates from Cincinnati to Columbus?

Mr. Turner: I have tried, Your Honor, to the best of my humble ability to get him to name somebody that would haul it for that price.

Commissioner Geiger: Well, now, press that one thing.

Mr. Turner: I have pressed that to the limit.

Q. Have you anything more to say as to who will do this hauling?

A. No, sir, I don't care who does it.

Q. Have you got a bid on it?
A. No, sir.

By Commissioner Geiger:

Q. Have you in your experience in the past been reason-
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[fol. 630] ably uniform in getting a $2.00 per ton trucking rate from the deport or from the freight yards or any place where you use any pipe?
A. Yes, sir.

Mr. Turner: He has never had such experience and he has said so.
The Witness: I said yes to the Commissioner's question.

By Mr. Turner:

Q. I know; but to my question, you said you had not similar experience such as this building in Columbus here.
A. I said nobody comes into Columbus and builds an entire gas system, or any other big city.
Q. You have never built in this territory between the deport and the Court House and Fourth Street and the River, have you?
A. No, sir.
Q. You have never built anything east of Fourth Street in the City of Columbus?
A. No, sir.
Q. And you have never built anything south of the Court House in the City of Columbus?
A. We are talking about hauling pipe.
Q. Well, you have never hauled any pipe then?
A. No.
Q. Where in the City of Columbus have you ever hauled an inch of pipe?
A. I don't know where our pipe was hauled on the Columbus Country Club job, but they started in the City of Columbus.
Q. Well, now, get down to that; that would help us a little bit.
A. Well, here is what happened on that job. They did the ditching for us and the backfilling, hauled the pipe, and their entire price was 14 cents a foot.
Q. In the country, and how deep?
A. 2½ feet—no, pardon me, it was about 2 feet.

[fol. 631] J. PAUL BLUNDON, called as a witness on behalf of the City of Columbus, being first duly sworn, testified as follows:

Examined by Mr. Davies:

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[fol. 632] Q. You may state your name?

A. J. Paul Blundon.

Q. Where do you reside?

A. Keyser, West Virginia.

Q. What is your business or profession, Mr. Blundon?

A. I am a consulting engineer.

Q. What has been your education for this profession?

A. I have engineering degrees from the University of Maryland and Cornell University.

Q. When did you graduate?

A. I received my first degree in 1915, and the second in 1917.

Q. Are you a member of any technical societies?

A. Yes, sir, I am a member of the American Society of Civil Engineers, the American Society for Testing Materials, and the American Water Works Association.

Q. State in a general way your experience in the line of your profession?

A. From July, 1915, to January, 1916, I was a foreman with the Washington Steel & Ordnance Company, at Giesboro Point, D. C.; Steel and Brick mill building construction, locating and setting heavy machinery.

January, 1916, to September, 1916, I was Chief Inspector at Shop Number 6 of the Midvale Steel Company, Nicetown, Pennsylvania.

From October, 1916, to May, 1917, student, Post Graduate work, Cornell University.

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[fol. 633] From May, 1917, to July, 1917, I was Assistant Superintendent for the Concrete Products Company, Haddon Heights, New Jersey, Supervising Shop, and detailing architectural drawings for cast cut stone for building purposes, including estimates of cost.

From July, 1917, to December, 1917, Assistant Engineer for Morris Knowles, Incorporated, working on the design and construction of a water supply system for the cantonment at Camp Meade, Maryland.

From December, 1917, to July, 1918, Assistant Division Engineer, State Road Commission of West Virginia, located at Piedmont, West Virginia, working on the surveys, design and construction of state roads and bridges.

From July, 1918, to December, 1918, I was in the engineering corps of the United States Army.

From January, 1919, to May, 1919, Assistant Office Engineer, State Road Commission of West Virginia, at Charleston, West Virginia, on the review of plans and estimates and designs of State Standard Structures.

From May, 1919, to October, 1919, Assistant Division Engineer, Division Number 1, State Road Commission of West Virginia, supervising surveys, design and construction of streets, roads and bridges in ten counties in West Virginia immediately surrounding Charleston.

From October, 1919, to July, 1921, I was County Engineer of Boone County, West Virginia, located at Madison, West Virginia, and also City Engineer of Madison, supervising the design and construction of a million dollar highway program in that county, and also supervising the design and

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[fol. 634] construction of a sewerage system in Madison, West Virginia. A part of the highway program in Boone County was carried out by means of county forces.

From July, 1921, to April, 1924, Assistant Division Engineer of Division Number 5, State Road Commission of West Virginia, at Keyser, West Virginia, being particularly charged with the survey and design of approximately six million dollars worth of state road work.

Since 1924, since April, 1924, I have been engaged in private practice as a consulting engineer at Keyser, West Virginia, the first five years of which I was also secretary, Treasurer and General Manager of the Polino Construction Company, general contractors.

Q. What was the nature of that contract work?

A. That was a general contract work. It included roads

tion work.

and bridges, water works, sewers, dams, general construc-

My engineering experience from 1924 to date has covered the surveys, designs, supervision of construction of sewerage systems, sewage disposal plants, water systems, water purification plants, bridges, highways, streets, dams, buildings, retaining walls and athletic fields, water, gas and electric rate case work.

During that period, as General Manager for the Polino Construction Company, I prepared bids on approximately $1,500,000.00 worth of work a year, and the company actually did about $250,000 worth of work a year, and since 1929 when I sold my interest in the Polino Construction Company, we have prepared bids and made final estimates for other contractors to a considerable extent.

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[fol. 635] The particular engineering work since 1924 has included the sewerage system at Ridgely, West Virginia; the water system at Ridgely; sewerage system and sewage disposal plant at Charlestown, West Virginia; dam and gravity waterline at Westernport, Maryland; Interstate Bridge over the Potomac River at Piedmont; Interstate Bridge over the Potomac River at Paw Paw, West Virginia; Rock Ford Bridge in Morgan County over Sleepy Creek; Filtration Plant and Water Distribution System at Romney, West Virginia; Dam, Filtration Plant and Distribution System at Lumberport, West Virginia; Dam and Water Distribution System at Durbin, West Virginia; Complete Water System and Sewer System at Greenup, Kentucky; Filtration Plant at Milton, West Virginia; Preliminary Estate of Cost and design of Sewage Disposal Plant at Princeton, West Virginia; Preliminary Estimate of Cost and Design of filter plant and addition to sewerage system, and water distribution at Ripley, West Virginia.

The Weston, West Virginia, Water Rate Case. This job was done for the Public Service Commission of West Virginia and included an estimate of the cost of reproduction new less observed depreciation of the property of the Weston water Company.

Two electric rate adjustments with the Keyser Light & Power Company, serving Keyser, West Virginia.

Electric Rate Adjustment with the Potomac Valley Power Corporation, serving the south branch valley of West Virginia.

The cost of reproduction new less observed depreciation of the United Fuel Gas Company in West Virginia and the Warfield Natural Gas Company property in Kentucky.

4328

[fol. 636] The reproduction new less observed depreciation of the gas property of the Monongahela West Penn

Public Service Corporation and the State Line Gas Company. This work also included the preparation of a historical cost of that portion of the above property which was taken over from the West Virginia Utilities Company.

A report on the reproduction new less observed depreciation of the property of the Beckley Water Company.

Estimate of cost of extension of the water lines of the Morgantown Water Company to Scotts Run, together with a study of the proposed revenues and operating expenses and fixing of fair rates for water on Scotts run.

Estimate of the present value of the Ripley municipal Water Plant.

Survey, design, supervision of construction of sanitary sewerage system, at Paden City, West Virginia.

Survey, Design and construction of municipal filtration plant and revision of distribution system at Piedmont, West Virginia.

Survey, design and supervision of construction of filtration plant, reservoir and revision of distribution system of the water plant at Richwood, West Virginia.

Estimate of cost and design of Fireman's Hall at Ridgely, West Virginia.

Survey and design of overflow interceptor sanitary sewer at Keyser, West Virginia.

Study of the advisability of accepting water franchises at Eminence, Kentucky, Grayson, Kentucky, and Hurricane, West Virginia.

4329

[fol. 637] Preparation of estimate of cost of reproduction new less observed depreciation and a study of the annual depreciation allowance of the Glenville Water property of the West Virginia Utilities Company.

Estimate of costs, specifications and designs for garage, a large garage, that is, at Ridgely, West Virginia.

Preparation of preliminary report and survey, design and supervision of construction of new water supply for Frostburg, Maryland.

Preparation of preliminary report, survey, design and supervision of construction of a new water supply for Pennsboro, West Virginia.

Preparation of estimate of cost of reproduction less observed depreciation of the Philippi, West Virginia, water

plant of the Mountain State Utilities Corporation, together with a study of annual depreciation.

Survey, design and specifications for reenforced concrete swimming pool for the West Virginia Guard Camp at Point Pleasant, West Virginia.

Preparation of cost estimate of water supply for Oakwood, Whipple and Scarbro, those being coal towns of the White Oak Fuel Company.

Appraisal of the coal lands of the Penn Company, including oil and gas rights, in Boone County, West Virginia, for taxation purposes.

Preparation of surveys, plans, specifications and supervision of construction for the water supply at Grantsville, West Virginia.

Supervision of the operation of the Tri-State Utilities 4330

[fol. 638] Corporation, the Milton Water Company, and the Coal operation of the Belle Alkali Company in Kanawha County, West Virginia.

We have now work in progress in the United Fuel Gas Case in West Virginia, and our work in this case and the Wheeling Gas Case, involving the Natural Gas Company of West Virginia, and still under construction Frostburg, Grantsville, and Pennsboro Water Supply.

Q. How much of an organization do you have in your concern?

A. About 15 at the present time.

Q. Did you say your offices were at Keyser?

A. Keyser and Charleston.

Q. Keyser and Charleston?

A. Yes, sir, the two offices.

Q. Do the employments that you have enumerated there include employments by both utilities and the public?

A. Yes, sir. You mean rate cases?

Q. Yes, so far as rate cases are concerned?

A. Yes, sir.

Q. You are the same J. Paul Blundon who testified as an engineer for the protestants in the United Fuel Gas Case of West Virginia, pending during the year 1928, and still pending before the Public Service Commission of West Virginia?

A. I am.

4340 and 4341

Q. What experience, Mr. Blundon, have you had in the observation and study of gas plants as an engineer?

A. I have made a personal inspection of every compressor station of the United Fuel Gas Company, Monongahela-West Penn Gas Company, The State Line Gas Company, and have inspected all of their major items of property. I think that I have seen or did see every item of property of the United Fuel Gas Company, with cost of reproduction of as much as $1,000.00.

Commissioner Bricker: Were you ever employed by any gas company in a managerial or operating capacity?

The Witness: Not by a gas company, no, sir.

[fol. 639] Mr. Blundon testified on cross-examination as follows:

4404

[fol. 640] Blundon—Cross-examination:

Q. Mr. Blundon, how old are you?

A. 34.

Q. 34. You spoke about some work at your home town,

4405

[fol. 641] Keyser, West Virginia. That is a town of about 6,000 inhabitants?

A. Yes, sir.

Q. And you spoke also of some work in Madison, did you not?

A. Yes, sir.

Q. That is a town of about 600 inhabitants?

A. No, sir, about 1,800.

Q. About 1,800?

A. Yes, sir.

Q. And Greenup, Kentucky, you spoke of some work there?

A. About 1,600.

Q. I have 910, to be exact.

A. Sir?

Q. I have it 910 taken out of the census. Uncle Sam is wrong?

A. Well, I expect the truth of it is that the corporate lines of Greenup are pretty well drawn in and that the total number of people living there is practically 1,800.

Q. Madison, they have 604. They made it four over my 600 and Milton, you spoke about some work there, too, did you?

A. Yes, sir.

Q. They have a population of about 1,023?

A. It is more than that. I don't know what census you have there, but I do know, for instance, in Milton in 1929 there were 458 houses.

Q. We get it out of an atlas right here in the Commission. And Ripley, about 580.

A. That is incorrect. Those figures must be old.

Q. All right. I understand you don't claim to be a geologist, do you?

A. I don't claim to be an expert geologist, no sir. I have studied some geology and have done work, engineering work in connection with geology.

Q. Did you ever do any work of any kind for a gas company, either a producing or distributing company?

4406

[fol. 642] A. Not for a gas company, no, sir.

Q. Did you ever do any designing of any kind for a gas company or any engineering work of any kind?

A. Not for a gas company, no sir.

Q. You don't know what percentage a driller takes or allows for chances of losing a hole, do you?

A. I expect that would vary with the driller.

Q. Well, do you know anything about it?

A. About drilling?

Q. Yes?

A. Why, I have gone into drilling costs in connection with the reproduction of various properties.

Q. Did you ever drill a well, a gas well?

A. Not a gas well, I have drilled deep water wells.

Q. But you never drilled a well of any kind in Ohio?

A. Not in Ohio, no sir.

Q. And no well of any kind in West Virginia?

A. No, sir. In Kentucky and Maryland.

Q. Not West Virginia or Ohio. And you never ran a gas company so that you would know anything about the distribution of gas from a practical standpoint?

A. I have never run a gas company. Of course, my studies of gas properties have made me more or less familiar with the distribution of gas.

Q. Well, what I am trying to get at here is whether or not you have ever had the responsibility of either building any part of the gas utility or of operating any part of the gas utility?

A. Read that question again, will you please?

(Question read.)

A. No, sir.

Q. You have never been connected in an official or engi-

4407

[fol. 643] neering capacity with a company that drilled either oil or gas, have you?

A. No sir. I have been a stockholder one time in an oil company there in West Virginia and was interested and familiar with their operations, but was not in an official capacity.

Q. We have all had our eye teeth cut with them.

A. I probably more so than the average man, because it was drilled in the county in which I——

Commissioner Bricker: That wouldn't prejudice you, would it, against the industry?

The Witness: No, sir.

Q. Would it make you favor the industry?

A. I don't believe it would do that, either.

Q. Well, I was, Mr. Blundon, trying to get at any qualification you had in respect of the actual operation of either a gas well or a pipe line or the prospecting for gas or delivering gas or anything like that.

A. Yes, sir, for the past two years and a half I have spent the major part of my time in examining and working with gas properties, not as an operator but in connection with rate litigation.

Q. You have been sort of tearing down valuations, haven't you, during that time?

A. No, sir, I would't say that. We have done a lot of work, and I kind of resent that "tearing down valuations", because we are not doing that, and certainly don't propose to do that.

4443 and 4444

[fols. 644 & 644a] Q. Of course, you have never had any practical experience in the matter?

A. I have never operated a gas company.

Q. Well, have you any other answer to my question—that you have not had any practical experience in such a matter?

A. Our practical experience has been limited to working with gas companies since May, 1929.

Q. What gas companies did you work for since——.

A. I did not say "worked for"; I said "worked with".

Q. What did you work with?

A. In connection with rate cases.

Q. In connection with rate cases?

A. Yes.

Q. Against the companies?

A. Against the gas companies.

[fol. 644b] Valuation and Operating Expenses

The Columbus Gas and Fuel Company

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[fol. 645] L. E. Welker further testified on direct examination:

Q. Have you prepared or had prepared under your supervision an inventory and appraisal of the property of The Columbus Gas & Fuel Company used and useful in the furnishing of natural gas in the City of Columbus as of December 31, 1929, in which you have included only the cost of cutting such pavement as was actually cut at the time the mains were laid?

A. I have.

Q. Will you produce the exhibit?

A. I will.

Mr. Turner: We ask to have this Exhibit marked Company Welker Exhibit No. 2.

And thereupon the Document last above referred to was marked for purposes of identification as Company Welker

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[fol. 646] Exhibit No. 2.

Q. Describe this exhibit briefly, stating generally what it contains, and a general description of the property valued.

A. This valuation report, or Exhibit No. 2, sets forth an inventory and estimate of the reproduction cost new as of December 31, 1929, of that part of the property of The Columbus Gas & Fuel Company used and useful for serv-

ice in the distribution of natural gas to consumers within the City of Columbus, Ohio.

The valuation is computed on cost units applicable as of December 31, 1929, applied to property inventory of that date. Both the "reproduction cost new value" and the "reproduction cost new value less depreciation" are developed from the priced inventory, and itemized in accordance with "A Uniform Classification of Accounts for Natural Gas Utilities" prescribed by the Public Utlities Commission.

The distribution system of The Columbus Gas & Fuel Company is supplied by gas purchased from The Ohio Fuel Gas Company, transported by their lines to the town borders measuring stations.

The major portion of the physical property as of December 31, 1929, consisted of the following:

Mains: 400.94 miles of distribution mains, used entirely for service within the city, and 20.49 miles used partly for service within the city.

Meters: Meters, exclusive of stock meters, owned by the company, 25,453.

Service Pipe Lines: 52,994.

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[fol. 647] District Regulators: 68, used in maintaining a uniform pressure throughout the system.

Industrial Regulators: 22.

District Regulator Structures: 56.

Tracts of Land entirely for service within the city: 51.

Tracts of Land partly for service within the city: 4.

In addition to the above property the Company owns a shop and garage building on Burr Avenue in Grandview Heights, and a garage and storage building on Water Street within the city. There is also a one and three-quarter million feet gas holder, located at the west end of Spruce Street, which assists in providing a dependable supply of gas to consumers.

40 and 41

[fol. 648] Account 234, Distribution Line Equipment, was priced by applying the actual material prices for the several classes of pipe and incidental material based upon the company's actual payment for these items or quotations by those maufacturers from whom the company would obtain the pipe. The installation costs applied are those costs

developed by the use of practical construction organizations or crews for reproduction construction of these mains or pipe lines, at labor prices actually paid by the company. Allowance is made for the use of such mechanical equipment as trenching machines, paving breakers, air tampers, and air compressors for testing, to such an extent as would be practical in a today's reconstruction project of this magnitude, although this item of property has been installed almost one hundred per cent by hand labor. The use of truck is likewise estimated in entirety instead of horse drawn equipment for the stringing of pipe.

Account 235, or Service Line Equipment, is priced by applying the company's actual or quoted cost for the material and the installation cost of company crews from practical experience at today's labor prices.

Accounts 236 and 237, or Meters and Meter Installation, are priced by applying the company's actual prices or quotations on meters in the purchase of the same from the manufacturer and applying the crew performance for the installation of the same based upon experience and at today's labor and trucking costs.

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[fol. 649] In pricing all of the foregoing items an allowance known as direct overhead on material of approximately one-half per cent for purchasing three per cent for waste, breakage and omissions, and one per cent for warehousing has been applied to the prices which would be paid to the manufacturer inclusive of freight costs. As to the installation a percentage of five per cent is applied to all items for omissions and contingencies. Inasmuch as the company is using a labor price generally of only 45 cents per hour, and the city water works department uses 50 cents or more for the same type of labor, this allowance of five per cent applied to 45 cents per hour only allows for an increased labor cost of 2¼ cents in the event that the distressing labor conditions of today would not prevail through an entire period of construction. This item of five per cent also provides for the contingencies such as lost time due to rain, weather conditions, frozen ground, traffic interruptions and other special construction costs that would be encountered in heavily congested business zones from subsurface obstructions, tunnelling under steam and street

railway crossings, extraordinary rock excavation and other items that would be unknown until encountered.

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[fol. 650] Q. What is the total reproduction cost new of the property of The Columbus Gas & Fuel Company used and useful in furnishing natural gas in Columbus as of December 31, 1929, exclusive of paving over mains not originally cut?

A. $6,224,806.00.

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Q. Well, all right. What is the reproduction cost new less depreciation of the property of The Columbus Gas & Fuel Company used and useful in furnishing natural gas in the City of Columbus as of December 31, 1929, but exclusive of the expense of cutting paving over mains where such paving was not actually cut in original installation?

A. $5,364,599.00.

240

[fol. 651] Q. Mr. Welker, have you discovered an error in the inventory and appraisal of The Columbus Gas & Fuel Company?

A. I have.

Q. State what it is?

A. The error is due to the inclusion or addition of freight from Birmingham to Columbus for cast iron pipe. The letter of quotation included in the cost date book——

Q. Exhibit number what?

A. Exhibit No. 6, I believe it is; it does not state clearly whether the cast iron pipe quotations were f. o. b. Birmingham, as is usually the practice in quoting cast iron pipe, or whether it is f. o. b. Columbus; I checked recently a purchase of cast iron pipe in another location with our quotation as received from the pipe company and included in Exhibit No. 6 and found that the prices quoted by the mill should include freight to Columbus. I have therefore made the freight deduction from Birmingham to Columbus on the cast iron pipe, which makes a deduction, of course, in the final valuation figures.

Q. Well, just trace it through; first, how much is the mistake in the final figure?

Mr. Huffman: May we have the page on Exhibit No. 6?

Mr. Turner: Page 67—well, no, that is the detail.

The Witness: I will trace all the sheets.

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[fol. 652] By Mr. Turner:

Q. Just trace the sheets through.

A. Referring to Exhibit No. 2, the final deduction to be made from the valuation figure of reproduction cost new less depreciation is $80,070.00.

Q. All right; now trace it through.

Commissioner Bricker: What page do you find the total figure on?

By Mr. Turner:

Q. Give the page on Exhibit No. 2 where the deduction should be made; that is on page 12, Mr. Calland says.

Commissioner Bricker: Deduct what amount?

Mr. Turner: $80,070.00 from the cost of reproduction new less depreciation.

The Witness: The total figure on page 12 for reproduction cost new less depreciation, Exhibit No. 2, is $5,364,599.00. The revised figure after deducting $80,070.00 should be $5,284,529.00.

Q. Now, so that there will be no mistake, you have taken out of that all overheads and that is the net figure?

A. The figure of $80,070.00 is a net figure after deducting any overheads or going concern value that might have been attributed to the freight.

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[fol. 653] And also—

D. O. Ferguson, called on behalf of The Columbus Gas & Fuel Company, being first duly sworn, testified as follows:

Examined by Mr. Turner:

Q. State your name?

A. D. O. Ferguson.

Q. What is your occupation?

A. Gas Engineer.

Q. Employed by whom?

A. Columbia Engineering & Management Corporation.

Q. Are you familiar with what has been introduced in this case as Welker Exhibit No. 9; I am directing your at-

tention to that part of it which purports to give your qualifications?

A. I am familiar with this.

Q. Is that a correct recital of your qualifications and experience?

A. Yes, sir.

Q. Are you familiar with the inventory and appraisal of the property of The Columbus Gas & Fuel Company, which has been introduced in this case as Company Welker Exhibit No. 2?

A. In a general way I am familiar with the entire appraisement.

Q. Did you participate in the preparation of that inventory and appraisal?

A. Yes, sir, but more particularly——

Q. Well, I will ask you that in just a minute; what did you have to do with the preparation of that inventory and appraisal, tell us now?

A. I had charge of setting up the cost of installation of the mains within the City of Columbus.

Q. Under whom did you work.

A. Under the direction of Mr. Welker.

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[fol. 654] Q. And what account was that, do you recall the account number?

A. That was Account 240.

Q. 234, wasn't it?

A. 234.

Q. And what other work on that appraisal did you do or participate in?

A. In the cost of removing and replacing paving over mains.

Q. Does Welker Exhibit No. 2 correctly set forth the facts and results obtained and reported by you?

A. Yes, sir.

220

[fol. 655] And also—

RAYMOND SCOTT KNOX, called on behalf of The Columbus Gas & Fuel Company, being first duly sworn, testified as follows:

Examined by Mr. Turner:

Q. State your name?
A. Raymond Scott Knox.
Q. What is your occupation?
A. Gas engineer.
Q. Employed by whom?
A. The Columbia Engineering & Management Corporation.
Q. Are you familiar with what has been introduced in this case as Company Welker Exhibit No. 9?
A. I am.
Q. Which purports to give your qualifications?
A. I am.
Q. Are your qualifications and experience correctly set forth in that exhibit?
A. Yes, sir.
Q. Are you familiar with the inventory and appraisal of the property of The Columbus Gas & Fuel Company which has been introduced in evidence in this case as Company Welker Exhibit No. 2?
A. Yes, sir.
Q. Did you participate in the preparation of that inventory and appraisal?
A. Yes, sir.
Q. What did you have to do with the preparation of that inventory and appraisal?
A. I compiled the inventory of services and meters; prepared the cost of installation of services and meters.
Q. Did you make a layout?
A. Yes, sir.
Q. What was that layout for?
A. For the purpose of determining the number of services and their length.

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[fol. 656] Q. Did you have anything to do with spot checking?
A. Yes, sir.
Q. Tell the Commission what that was?
A. We made a spot check of 5,700 services in the field.
Q. For what purpose?
A. To determine the length of the services.
Q. And does Welker Exhibit No. 2 correctly set forth the facts and results obtained by you?

A. Yes, sir.

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[fol. 657] And also—

CHARLES T. KONECNY, called on behalf of The Columbus Gas & Fuel Company, being first duly sworn, testified as follows:

Examined by Mr. Turner:

Q. State your name, Mr. Konecny.
A. Charles T. Konecny.
Q. What is your occupation?
A. Gas engineer.
Q. By whom are you employed?
A. Columbia Engineering & Management Corporation.
Q. Are you familiar with what has been introduced in this case as Company Welker Exhibit No. 9, giving your qualifications?
A. I am.
Q. Are your qualifications properly set forth in that exhibit?
A. They are.
Q. Are you familiar with the inventory and appraisal of the property of The Columbus Gas & Fuel Company which has been introduced in this case as Company Exhibit 2?
A. I am.
Q. Did you participate in the preparation of that inventory and appraisal?
A. I did.
Q. What did you have to do with it?
A. I inventoried the district regulators, worked up the installation costs on district regulator equipment and industrial regulator equipment; I worked up a portion of the inventory on regulator structures; I worked up the laying cost for all sizes of bell and spigot cast iron mains.
Q. Go ahead.
A. I worked up the loading, hauling and unloading costs for various sizes of cast iron mains, worked up the instal-

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[fol. 658] lation cost for cast iron hub leak clamps; worked up the installation cost for the foundation of the one and three-quarter million foot gas storage holder.

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Q. Does Welker Exhibit No. 2 correctly set forth the facts and results obtained and reported by you?

A. It does.

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[fol. 659] Qualifications of T. E. Mullin

T. E. Mullin is a graduate engineer from The Ohio State University. He has had some fifteen years of practical experience in engineering, the majority of his time being devoted to electrolysis survey studies, soil corrosion studies, etc., all bearing in particular upon the deterioration of pipe in the ground.

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[fol. 660] A brief summary of his experience is as follows:

The year 1915, graduated in Electrical Engineering, Mechanical Engineering, The Ohio State University.

1915 to 1917, The Ohio State Telephone Company, Electrolysis Engineer specializing in electrolysis surveys in Columbus and other Ohio cities.

1917 to 1918, The Ohio Bell Telephone Company, Outside Plant Engineer.

1918 and 1919 United States Army Air Service.

1919 to 1922, The Ohio Bell Telephone Company, Outside Plant Engineer.

1922 to 1925, The Columbus Gas & Fuel Company, Electrolysis Engineer in charge of the installation of protective measures on the natural gas systems.

1925 to 1928, The Ohio Fuel Gas Company and Logan Company, Electrolysis and Appraisal Engineer.

1928 to 1930, The Columbia Engineering & Management Corporation, Gas Engineering, specializing on depreciation studies of mains of natural gas distribution systems in Ohio, Pennsylvania, West Virginia and Kentucky.

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[fol. 661] And also—

THOMAS E. MULLIN, called on behalf of The Columbus Gas & Fuel Company, being first duly sworn, testified as follows:

Examined by Mr. Turner:

Q. State your name?

A. Thomas E. Mullin.

Q. What is your occupation?

A. Gas Engineer employed by The Columbia Engineering & Management Corporation.

Q. You were sworn, weren't you?

A. Yes, sir.

Q. Are you familiar with what has been introduced in this case as Company Welker Exhibit No. 9?

A. I am.

Q. Showing your qualifications and experience?

A. Yes, sir.

Q. Are your qualifications and experience correctly set forth in that exhibit?

A. They are.

Q. Are you familiar with the inventory and appraisal of the property of The Columbus Gas & Fuel Company which has been introduced in evidence in this case as Company Exhibit No. 2?

A. I am.

Q. Did you participate in the preparation of that inventory and appraisal?

A. Yes, sir, I did.

Q. What did you have to do with its preparation?

A. Under the direct supervision of Mr. Welker I made inspections of mains and services of the property to determine their depreciation and apply this depreciation to the reproduction cost new; that is Accounts 234 and 235.

Q. All right.

A. I also collected soil samples at various locations in the city, identified them and turned them over to our chem-

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[fol. 662] ist, Mr. Waterman, for analysis.

Q. Upon how many inspections were the results in Exhibit No. 7 based?

A. They were based on 241 inspections of mains and 92 inspections of services.

Q. Have you a map which shows the location of the points at which such inspections were made?

A. I have.

Q. Let us have it.

Mr. Turner: This map may be marked as Company Mullin Exhibit No. 24.

And thereupon the map last above referred to was marked for purposes of identification herein as Company Mullin Exhibit No. 24.

Q. I call your attention to what has been marked Company Mullin Exhibit No. 24; please state whether that is such a map and what the map shows as to locations at which you made the inspections?

A. This is the map——

Q. Go slower; go slower.

A. This is the map which I prepared and which shows the locations of all the inspections which I made on the mains, both in the city and outside the city, at this time.

Q. Well, now, is there a city line here; have you drawn a city line on one of these maps?

A. Yes, sir, the city line is there on this map; the code indicates, the single dot with the one circle around it, indicates the pipe inspection point on the city main. The code, with the larger circle around it, indicates the pipe inspection point of a medium pressure main outside the city.

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[fol. 663] Q. But used for city use?

A. Yes, sir. On this map there are a total of 241 locations, that includes both the inspections inside the city and the ones outside the city.

Q. But the ones outside the city are pipe inspections of pressure mains used in the city?

A. Yes, sir.

Q. That is for service to the City of Columbus?

A. That is for service to the City of Columbus, yes, sir.

Q. Now have you made any inspections in addition to those shown on this Exhibit No. 24?

A. I have.

Q. How many?

A. A total of 151 additional inspections on city mains and 31 inspections on services.

Q. Have you made a map showing where those inspections were made?

A. I have.

Mr. Turner: Mark this Company Mullin Exhibit No. 25.

And thereupon the map last above referred to was marked for identification herein as Company Mullin Exhibit No. 25.

Q. I hand you what has been marked as Company Mullin Exhibit No. 25 and ask you to state whether that is such a map?

A. It is such a map.

Q. Were these last inspections made before or after the preparation of Company Welker Exhibit No. 7?

A. They were made afterwards.

Q. That is the ones on Exhibit No. 25; the ones on Exhibit No. 24 were made before, were they not?

A. I better explain Exhibit No. 25.

Q. All right.

—. This Exhibit No. 25——

Q. Go slower, for Heaven's sake.

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[fol. 664] A. Shows the location of all the inspection points, both the ones before and after the preparation of Exhibit No. 7. On this map is shown a total of 392 inspection points.

Chairman Geiger: Does it show all of those that are on Exhibit No. 24?

The Witness: Yes, sir, it shows those and also 151 additional.

Chairman Geiger: Then wouldn't it simplify matters if you would withdraw Exhibit No. 24?

Mr. Turner: No, Exhibit No. 7 was built on 24, and for that reason we thought we better have two maps.

By Mr. Turner:

Q. Did the later inspections change the conclusions reached in Company Exhibit No. 7?

A. They changed them very little; the condition of the system—the condition of Account No. 234 was raised very slightly and the condition of Account 235 was lowered slightly.

Q. Have you a map showing the location from which soil samples were taken?

A. I prepared such a map but I have not—it is not here today; it was prepared for Professor Demorest and he has it with him.

Mr. Turner: We expected to put him on at the same time we put Professor Demorest on; suppose we call it Exhibit No. 26.

Mr. Butler: All right.

Q. What do the locations on the map Exhibit 26 show?

A. This map shows the location of soil samples which were taken in the 1925 appraisal and analysis at that time, and it also shows 58 soil locations—the selection of 58 soil samples taken at this time and analyzed by our chemist.

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[fol. 665] Q. What year do you mean by "at this time"?

A. 1930.

Mr. Butler: When were these taken?

The Witness: They were taken in 1925 or at the time of the other rate case.

By Mr. Turner:

Q. Can you, without the map being here physically, tell the Commission in a general way where you got these soil samples? In other words, I want to show whether or not the soil samples are representative of the soil in which the company's mains are laid; that means as to whether you have taken soil samples from different parts of the city. Now go ahead on that. Have you a list of them?

A. I have a list of them, yes, sir.

Q. Have you the list with you?

A. Yes, sir.

Q. All right, go ahead and give it.

A. Shall I read the list?

Q. Yes.

A. Mr. Waterman analyzed these.

Q. Well, you are the one that took the samples; that is what we want, and where you took them from.

Chairman Geiger: Is it necessary to read that list? How many have you?

The Witness: 58.

Mr. Turner: The map will show, Your Honor, so we will put the map in in the morning, so that will be all right. I don't want to take up too much time.

Q. Now I wish you would explain just how you took these samples, the proximity to the pipe and one thing and another.

A. These samples of the soil were taken at locations where I had also made pipe inspections and the soil was

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[fol. 666] taken from immediately around the pipe in each case and retained in a quart Mason fruit jar, which was labeled and identified and then turned over to Mr. Waterman for analysis.

Q. Are you familiar with the exhibit which has been introduced in this case as Company Welker Exhibit No. 7?

A. Yes, sir, I am.

Chairman Geiger: Permit one question just prior to that; did you make a soil analysis of soils from every place where you made pipe inspections?

The Witness: No, sir, I did not; just a certain percentage of them, only here and there on it; but you might say that the soil samples that were taken come from each part of town and are representative of the soils in Columbus.

Chairman Geiger: Thank you.

By Mr. Turner:

Q. I believe you said you were familiar with Exhibit No. 7 there?

A. Yes, sir.

Q. The depreciation Exhibit?

A. Yes, sir.

Q. Are the statements in Exhibit No. 7 a correct statement of the methods employed, the facts obtained and the computations made with reference to the existing condition of the distribution mains and services of The Columbus Gas & Fuel Company as of December 31st, 1929?

A. The statements are correct.

Q. Do the statements and computations in said Company Welker Exhibit No. 7 correctly show the existing condition of the distribution lines and services on December 31st, 1929?

A. They do.

Mr. Turner: That is all.

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[fol. 667] By Mr. Butler:

Q. Mr. Mullin, last evening you were good enough to hand to me a compilation which is designated "depreciation of mains and services, location of pipe, inspection

points, Columbus Gas & Fuel Company appraisal, December 31, 1929." On that you give the inspection number, the location of the inspection point, the map number. That ties it up with the map you put in, I presume?

A. Yes, sir, it does.

Q. Then what you call the nominal size of the pipe, field loss per cent., and after that loss accepted per cent.; but nowhere does this reveal the data showing that you saw or what you discovered. I take it that this that you handed me was meant to be and is a record of your conclusions?

A. Yes, sir, that is true.

Q. Now, do you have some compilation that will show the facts as you found them?

A. I have that, yes, sir.

Q. May I see that? Have you several copies of it?

A. No, but I have the original field data sheets which you, no doubt, refer to, and I also have other summaries of the field data sheets which go to make up my estimate of the condition applicable to each size main. Now, here it what it refers to.

Mr. Turner: While he is locating that, may we not have that marked or a copy of this marked as Company Mullin Exhibit No. 27.

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[fol. 668] And thereupon the paper writing above referred to was marked for the purposes of identification as Company Mullin Exhibit No. 27.

A. Now, here, Mr. Butler, the field inspection sheets are in this book here. There are no copies of them. This inspection you have is 31 and inspection 31, the summary of it, is indicated on No. 31 in this Exhibit—No. 27, I believe—No. 31 here. No. 31 here shows the alley west of Harding Road 150 feet south of Powell, indicated on the field inspection sheets.

Q. What you referred to a moment ago in this Exhibit that has been marked Exhibit No. 27, isn't it?

A. Yes, sir.

Q. And the other book where you have your original field notes, that has not yet been marked?

A. No, sir. That is part of the field inspections, and here is an additional volume of field inspections, making a total of 392, and 123 service inspections, so that there is a total of 500 and something.

Q. These are what I wanted, Mr. Mullin. Thank you. And I shall want to ask you a few questions. Do I observe there that you did state in your field notes the age of the pipe each time?

A. I have that data on each field inspection, yes, sir, which was gotten at a later date than the time of the inspection. This was gotten for another calculation as to the average age of the pipe which I located and had no influence on the condition.

Q. Well, how much of those pages, which, for want of a better term, I call field notes, were completed at the point of inspection?

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[fol. 669] A. They were all completed at the point of inspection with the exception of what is in this square here which is marked "data from company records." That indicates the date the main was laid and the nominal time as indicated on our company map records, and also the type of pipe, either wrought iron, wrought steel or cast iron.

Q. In other words, everything on these original notes was put on at the point of inspection except what appears under data from company records?

A. That is true.

Q. You say you give no influence at all to the age?

A. Yes, sir, that is what I said.

Q. In no case?

A. In no case.

Q. Supposing you found two pipes of the same size, same material, pitted, holed in the same way, suppose one were one year old and one 25 years old. Do you mean that that would not challenge your consideration or attention?

A. No, it would not. If they were both penetrated by a hole, I would probably give them both the same per cent.

Q. Probably you would like to explain to the Commission why that is so.

A. Well, one would be just as valuable as the other.

Q. That is, you think the hole in the one is just as bad as the hole in the other?

A. No, the remaining metal in the old pipe would be just as good as the remaining metal in the new pipe.

Q. Wouldn't it challenge your attention that here a pipe was put down and it remained only a year or a year and a half or two years and it became pitted in that way?

A. Oh yes, indeed it would, I would wonder why it be- 357

[fol. 670] came that way, what caused it, but that wouldn't have anything to do with the value of the pipe.

Q. What is the weighted average age, if I may use the word "weighted"—I think I use it too often—what is the average age of your mains?

A. Do you refer to the average age of the mains or the average age of the mains which I inspected.

Q. No, sir, of all of your mains.

A. I have no figure on that

Q. Didn't that interest you?

A. Not in my calculations, no, sir.

Q. Not even as a special investigator along these lines?

A. If I had had opportunity I might have found that out. I did not think it was of interest or value at this time. So I have not done it.

Q. What was the average age of your inspections?

Commissioner Klinger: By that you mean the average age of the pipe that he——

Mr. Butler: That he uncovered and looked at, yes, Your Honor.

A. Of the 241 inspections, the average age of all kinds of pipe, that is, wrought iron or steel and cast iron is 21.6 years, and of the total inspections, that is 392 inspections, the Average age is 21.4 years.

Q. In selecting your points of inspection, you did not have in mind at all the age of the pipe?

A. No, I did not.

Q. How?

A. No, sir.

Q. You did——

A. I might add, however, that I did not try to get the newest pipe by any means.

Q. You did not try to get the newest pipe?

A. No, sir. 358

[fol. 671] Q. What I mean is you just didn't pay any attention to it?

A. That is just about what it amounts to.

Q. I don't care what it amounts to. Isn't it the truth that you paid no attention to the age in selecting the points of inspection? Now, surely that can be answered yes or no.

A. Well, on certain Atlas maps there are certain indications there which indicate when a main was installed. What I mean, there are work order numbers and these work order numbers start from No. 1 and they go on up to some higher number, which is the number that would be used today. In case I wanted to make an inspection in a certain location on the map and I saw several of these numbers referring to the work orders, I would be more likely to take the lowest number than I would to take the larger number, because it would be an older main, I take it.

Q. Why would you be likely to?

A. Because it would be fairer to you people than it would be to the company.

Q. Why fairer if it makes not a difference.

A. I don't mean fairer. It would be a disadvantage to the company.

Q. Why, if the age had nothing to do with it, were you concerned about it? That is what I am getting at. I am not for the moment disputing the thing, but I am trying to get your motive and your reason, see?

A. The age does have something to do with the condition of the pipe, but not on the value that I would put on the pipe.

Q. I thought you would have some explanation. That is why a little while ago I wanted to be fair. Now, explain what you mean by that statement.

A. I do not want to give the impression that a main that was put in twenty years ago would be in as good shape as

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[fol. 672] one that was put in last year. But my inspection would show that. It would show the actual condition of the main as I saw it, and whether it was one year old or twenty years old made no difference.

Q. You say you would not expect the twenty year old main to be as good as the one year old main?

A. No, sir, I would not.

Q. Why not?

A. Because it has been exposed to soil corrosion through a longer period of time.

Q. And electrolysis, if any?

A. And electrolysis, if any.

Q. If you were buying pipe without any other inspection, would you pay any attention to the age, that is, second-hand pipe I mean? Would that mean anything to you?

A. Not, if it was secondhand pipe it would not, no, sir.

Q. Now what do you mean by field loss per cent?

A. That is the per cent. I estimated the pipe to be at the time of the field inspection.

Q. That was the judgment that you recorded so to speak in the trench?

A. That is it.

Q. And what do you mean by loss adopted per cent?

A. In addition to the field inspection, I also made a check calculation in the office from the notes which I had taken in the field, which amounts to a check of my field estimate. That consists of two parts. One I had made from an estimate, from a measurement of diameter that I made in the field, and this diameter was an accurate measurement of diameter, horizontally and vertically, of the pipe at the point of inspection. And from this, as compared with nominal diameter of new pipe, I made a calculation if there was

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[fol. 673] a loss, or a less diameter than there should have been of nominal pipe. And this calculation was made and set down in per cent. In addition I made another calculation on the measurement of the deepest pit. This was also made in the office and also set down in per cent. And then I added these two calculations together, that is, the loss by diameter measure and the estimated loss after pitting, and if this combined loss was greater than my field estimate, I changed my field estimate to a lower figure: I took an average of this office estimate and my field estimate and set down my adopted estimate, as I would use it in the appraisal. However, if my office estimate was greater than my field estimate, I did not change my field estimate. I let it stand as it was.

Q. How did you reach your conclusion at the excavation? didn't you reach it in the same way that you did at the office?

A. In a measure I did. But I had no—I might not have been severe enough possibly or I might—in case I was not severe enough in the field, why this office estimate would catch me.

Q. What you did was really in the office to re-compute, didn't you, and see whether in your hurry you had any mistake in the field?

A. That is true.

Q. So that there were no new methods used in the office?

A. Well, in a way it was, too.

Q. I don't know what you mean by that.

A. Of course, I considered all of those factors in the field when I made my field estimate.

Q. What additional new method or new consideration did you put into your office calculation that you did not consider

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[fol. 674] at the excavation?

A. In some cases I might have penalized the company, because oftentimes the main might never have been up to normal diameter. It might have been of less diameter when it was new. And I might not have depreciated the price in the field due to the loss in diameter sufficiently. But when I got to the office and made the calculation, I would penalize the company that much in case the diameter showed less than at the office.

Q. Who helped you at the office?

A. I did it all myself.

Q. All yourself?

A. Yes, sir.

Q. I still don't follow you. I cannot for the life of me see how you changed your methods from the field to the office, and I do not quite understand that you contend that you did. So I will leave it there. Now, go a step further. This loss adopted per cent., being the office check, and the field loss per cent. do not differ enough to be set down here, do they? The difference is so slight that it may be entirely forgotten.

A. Well, I did not make the estimate on the field per cent. but I did on the adopted per cent. So I don't know what the difference would be.

Q. Do you mean to tell us that you went through all this and re-checked it in the office and then cannot give us an idea how much the office varied from your field?

A. Well, it would just simply tend to show that my office check would not influence me to change my field estimate; therefore, my field estimate was about right.

Q. Yes. Now, I ask you again, and if you do not know, look it up and report to me——

Mr. Turner: Why scold him now? Why in that tone of voice?

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[fol. 675] Mr. Butler: Oh, be quiet.

Mr. Turner: I will not be quiet. I want the——

Chairman Geiger: Mr. Turner, why scold the counsel in that tone of voice?

Mr. Turner: If the Commissioner had been listening to this instead of reading, I think you would have caught it.

Chairman Geiger: I was listening.

Mr. Turner: You cannot read and listen, too.

Q. If you have the figures and have the judgment, and if not, examine, whether the loss adopted per cent. differs from the field loss per cent, enough to be of any consequence in this matter.

A. There was some little difference. It might not be of very much consequence, that is true.

Q. In other words, checking it as you did here, from your point of view, it showed that you did your work with rather rare care in the excavation.

A. That is true, yes, sir.

Q. Exactly. I think you said you chose these points of inspection with reference to the pipe sizes?

A. Yes, sir.

Q. Well, will you give me the amount of mains down in the city of the various sizes, so that we can judge whether you did that or not?

A. That is all given on our inventory in one of the other exhibits, clear down to the foot. I can get it for you.

Q. Yes, I wish as you give that you would then give the number of inspections against that size of pipe, because then we will not misquote you in any way. Would you prefer, Mr. Mullin, to make a statement and bring that in?

A. I could easy enough. I can let you know what I have here in regard to that.

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[fol. 676] Q. I haven't any desire to punish you by making you dig out those various matters, because I still want to go further. I want you also to state the amount of the various kinds, that is, cast iron, steel and wrought iron, and the inspections you made against them.

A. I have it all right here.

Q. If you have it there, very good.

A. May I ask, do you want the number of inspections of these 241 or of the——

Q. Oh, I think you are talking about the whole, aren't you?
A. I can talk of the whole.
Q. I think you might as well, because that is what you are really relying upon, as I understand it.

Mr. Butler: Mr. Turner, what do you think about this? Shall Mr. Mullin prepare an exhibit where it will stand out for all of us?

Mr. Turner: He can read it right in. He says he has got all of the data here.

The Witness: You want to know the footage now of pipe and then the number of inspections opposite that size and kind of pipe, I guess. That is what you want? On two inch wrought steel pipe there are 39,207 feet. I hade five inspections.

Three inch pipe, 48,649 feet.

Q. When you say three inch, do you give the kind of pipe?
A. I should have said three inch wrought steel pipe, seven inspections.

Four inch wrought steel pipe, 385,208 feet, 53 inspections.
Six inch wrought steel pipe, 141,340 feet, 17 inspections.
Eight inch wrought steel pipe 60,448 feet, 11 inspections.
Ten inch wrought steel pipe, 13,133 feet, two inspections.

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[fol. 677] Twelve inch wrought steel pipe 2,596 feet, two inspections.

One and one-fourth inch wrought iron pipe 4,388 feet, one inspection.

Two inch wrought iron pipe 127,470 feet, 18 inspections.
Two and one-half inch wrought iron pipe 13,208 feet, two inspections.
Three inch wrought iron pipe 293,776 feet, 52 inspections.
Four inch wrought iron pipe 488,267 feet, 99 inspections.
Six inch wrought iron pipe 27,979 feet, 10 inspections.
Eight inch wrought iron pipe 10,047 feet, three inspections.
Ten inch wrought iron pipe 11,455 feet, four inspections.
Twelve inch wrought iron pipe 11,375 feet, five inspections.

Six inch cast iron pipe 149,362 feet, 29 inspections.
Eight inch cast iron pipe 106,940 feet, 22 inspections.
Ten inch cast iron pipe 109,405 feet, 19 inspections.
Twelve inch cast iron pipe 14,894 feet, two inspections.
That makes a total of 365 inspections within the city.

By Chairman Geiger:

Q. What is the total lines?

A. What is it?

Q. What is the total mileage of the pipe inspection?

A. 394 miles I believe it was stated yesterday.

Q. Taking it as a general average, only about one inspection a mile?

A. Yes, sir, something like that. Something less than that.

Q. Varying, of course, in different groups of pipe?

A. Yes. Now these inspections were based not only on the footage, the estimate of the footage, but also on the value of the pipe inspected, that, is the number of inspections

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[fol. 678] which were made was based on the two factors, length and value.

By Mr. Butler:

Q. That is, if a pipe were high priced and another pipe low priced, you considered that? How did you adjust that? How does that enter into it?

A. I averaged it up. I took an average of the two, and therefore it was determined on the number of inspections, based on the average of the length and the average of the value.

Q. You take the value of a certain length of pipe?

A. Well, the total length in the system. That was the idea. I evaluated all of the pipe of the different sizes and I estimate the number based on the value, and then I did the same thing, estimated the number of inspections based on the length of pipe involved for each size, and then I averaged the two estimates of necessary inspections per size, and then I endeavored to follow that as near as I could.

Q. What kind of excavations did you make for the services?

A. These are the service inspections that were made at the same locations that the mains were inspected, and the inspection hole was large enough to include the service.

Q. Killing two birds with one stone?

A. Yes, sir.

Q. What is the average depth of the services?

A. As I inspected them, you mean?

Q. Yes, how deep do you find them in the ground?

A. Well, they vary. I have not got an average of the inspections which I might show you, although I could get that.

Q. You can give us some pretty close idea, can't you, born of your engineering observation?

A. Between two and three feet.

Q. While the mains would run what depth on an average?

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[fol. 679] A. Well, between two and four feet.

Q. How much of the surface did you uncover?

A. Between one and four feet in length.

Q. And average of——

A. An average of three foot, I would say on the services.

Chairman Geiger: Before you leave that may I ask a question? Are you going to another question?

Mr. Butler: Surely, go ahead.

By Chairman Geiger:

Q. You have spoken of different makes of pipe, some that are cast iron, some that are wrought iron, and some that are cast steel, and possibly some others. Would you give us very briefly the difference in the character of these pipes, their durability and whatever protecting surface may be put upon the pipe by nature of tar and paint or any other thing before they go in the ground; also the relative values of the different kinds of pipe. Do if you can briefly, and if you cannot we will not take time to do it.

A. That is rather a long question. I would not attempt to say which has the longest life, because it is a disputed question. I might have my own opinions, but they might not agree with someone that knows more about it than I do. So far as the coating of the pipe is concerned, practically none of the cast iron pipe in Columbus was coated. Cast iron mains for gas are not coated at the factory like water mains are. Consequently there is none of the pipe so far as I know that is treated in the factory when it is purchased, and it was not treated at the trench when it was installed. There is a certain percent. of the steel mains that have been painted,

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[fol. 680] and some of them treated with tar before they were installed. What per cent. that amounts to I really do not know. As far as I know the wrought iron pipe

which has been in for a good many years—I don't believe that was treated or painted possibly at all before it was installed.

Q. Not the same then as the pipe usually laid for water mains?

A. No, sir. No, sir, water mains are confined almost exclusively to cast iron, in this part of the country at least, and that is all dipped at the factory before it is shipped.

Q. There is just one other question and then I am through. You have spoken of electrolysis, a very interesting subject, and one on which you might give a long amount of testimony no doubt. But admitting that a pipe has been pitted to some extent by electrolysis or corrosion, assuming that the pit has gone half through the pipe—just assuming that—wouldn't the pit proceed for the remaining half way in less time than it has taken to go the first half of it? In other words, was there a protecting shell to the outer surface of the pipe, which, being pierced, would enable the pits to travel more rapidly, until they reached the inner surface.

A. The tendency seems to be in soil corrosion for the rate of penetration of pits and loss in weight also to decrease with exposure.

Q. Decrease with exposure? What do you mean by "exposure"?

A. Well, to decrease with years of service.

Q. That is, the deeper the pit goes, the less the rate of penetration?

A. Yes, the rate of penetration slows up.

Chairman Geiger: That is what I want to know.

Mr. Turner: May I ask him this question? Where does the pit start? From the outside or the inside of the pipe, in

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[fol. 681] electrolysis?

A. It starts from the outside of the pipe. Speaking of gas mains, from the outside of the pipe.

Chairman Bricker: At the point where the electricity is supposed to come out?

The Witness: That is true; yes, sir. Electrolysis, strictly electrolysis is confined generally to small areas, although, as I said yesterday, stray current electrolysis might take place in rare instances out somewhere far removed from any sub-station or places where you normally expect it.

That might be due to power resistance joints in the line of particular operating conditions in the railway system, which would cause it, or a few other causes. But normally electrolysis is confined down in the vicinity of sub-stations, where the current, after flowing in the main from some other point returns, and at that point leaves the main and in leaving the main corrodes it and causes it to pit.

By Chairman Geiger:

Q. In my observation of the repair of gas mains, my recollection is that the repair is more frequently made at the joint than any place else. Is or isn't the joint between two pipes the weakest part of the pipe?

A. Naturally there is more likely to be a leakage at the joint. It might not have been put together properly to start with. And other things might have influenced it to leak at that point, and consequently it needs the maintenance at that point, and it requires it to be tightened up sometimes or to be recaulked to stop the leakage.

Q. The leakage generally occurs more frequently at a joint than on an other portion of the pipe and requires more frequent repair.

A. That is true.

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[fol. 682] Q. At the joint?

A. Yes, but not necessarily due to corrosion I don't believe.

Q. No, it might be corrosion or break of the pipe at the joint and because of settling or any other cause.

A. Yes, sir.

Q. So these inspections that you made, did you make them at the joint or at the intermediate portions of the pipe, or did you pay any attention to them?

A. Most of them were made at intermediate points of the pipe, although there were some joints exposed in the pipe which I looked at; and in that case I examined the joint and considered the joint as well as the other portions of the pipe.

By Mr. Butler:

Q. What was your statement about the tendency of the pipe to get better as it gets older? What was that? I couldn't follow it.

A. I did not say it tended to get better as it got older. I said that the rate of penetration of a pit and also the rate of loss in weight of a pipe buried in soil tends to decrease as the exposure is continued.

Q. That is, it improves with age?

A. No, it gets worse slower.

Q. The deeper it has gotten before the better it will be?

A. I didn't understand, please.

Chairman Geiger: He intends to say, as I understand it, that as the pit increases in depth the progress of the increase in depth will be retarded. It don't decay as fast as the hole gets deeper as it did at the upper surface.

Q. So that I understand you can judge of the resistive powers of the pipe by the depth of the hole, that the deeper the hole is the more resistive power you would expect it to have?

A. No, that is not true. It all depends generally on the
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[fol. 683] kind of soil it has been in, and again on the length of time it has been in.

Q. If I understand you, Mr. Mullin, you took the diameter of each pipe, took it twice, across and up and down?

A. Yes, that is it.

Q. Now, what did you do with that after you got it?

A. Well, as I said, I used that in making an estimate of the loss which might be expected due to the loss in diameter. In case the diameter was loss than nominal, I would make an estimate of the loss in wall thickness as due to that measurement—as indicated by that measurement.

Q. What do you mean by "nominal"?

A. The nominal diameter of a pipe would be the diameter of the pipe when it was new as specified by pipe specifications.

Q. Is that an absolute diameter without variations?

A. The nominal diameter is, yes, sir.

Q. That is what you checked against is the nominal diameter?

A. That is what it is.

Q. Well, how in the world—tell the Commission how you could check a certainty which you took in the trench against

a mere nominal diameter from the books and which would vary; what sort of science is that?

A. The nominal diameter does not vary. It is fixed. But the diameter I imagine in the field might vary within limits.

Q. How is that?

A. The diameter I measured of certain sizes in the field might vary. It might be more than the nominal diameter or it might be less. In case it was less than the nominal diameter, I penalized the company by estimating a loss.

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[fol. 684] Q. What if it were larger?

A. If it were larger I would not give the company the benefit of that. I just let my field estimate go as it stood.

Q. What would that largeness come from?

A. It might be imperfect rolls in the mill.

Q. Exactly. These sizes against which you checked are nominal sizes, mill sizes, circular sizes. Now, as a matter of fact you know, don't you that those diameters are not exact, and that they do vary within those nominal sizes?

A. They vary within small limits.

Q. How much do they vary?

A. Five or ten per cent.

Q. Five or ten per cent? And yet you checked your exact measurements against——

A. No, I will take that back. They vary, the weights vary, within five per cent.

Q. What do the outside diameters vary?

A. Well, it is different with different pipe. I did not do that on cast iron pipe. I made no estimate due to the loss on the iron pipe, but I did on wrought iron and steel. So there is a large variation on the diameters of cast iron pipe that was used 25 years ago, and cast iron pipe that is used today, that is, the diameters.

Q. That is the reason you did not use it?

A. That is true. There is no close standard like there is on steel and wrought iron pipe.

Q. But, getting away from that, there is a standard, and my question is how much of a variation or how many variations do you engineers recognize from the exact standard? Now that is a very practical question?

A. I know from the inspections I have made that the variation is very slight.

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[fol. 685] Q. What variations?

A. The variations in diameter, of the actual diameter as you measure the pipe, and the nominal size.

Q. Well, within what limits I am asked you?

A. Of course, there are always exceptions to rules, but the variation is four or five hundredths of an inch possibly, not more than ten hundredths of an inch.

Q. Still there might be exceptions to that?

A. Yes, there might be exceptions to that.

Q. Of course, Mr. Mullin, all I am putting up to you at this time is—you are a scientific man and an engineer—you explain to the Commission just how you consider it there to take accurate diameters in the trench and check them against nominal diameters, which we all know to vary.

A. Was that a question, sir?

Q. Yes.

A. I did not understand it.

(Question read.)

Q. Well, in the first place nominal diameters do not vary as you state there, but actual diameters do vary.

By Chairman Geiger:

Q. You mean by diameters standard diameters?

A. Yes, sir.

Q. A six inch pipe is a six inch pipe?

A. A six inch pipe has a diameter of 6.625 outside diameter. That is the nominal diameter of that pipe. Now, if I measure an actual pipe which was somewhat less than that, I would penalize the company and make an estimate of the loss due to that loss in diameter, apparent loss in diameter.

Mr. Turner: Whether due to corrosion or mistake in the Mill?

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[fol. 686] The Witness: Yes.

Mr. Butler: He is getting along. He and I, General, are getting along.

Mr. Turner: He stated that several times, and I just called attention to it.

Mr. Butler: Oh I know that is what you did.

The Witness: It was not because I did not have confidence in my field estimate, but it was more as an estimate which would prevent somebody else from saying that I did not give consideration to that.

Q. Thinking of me, maybe? A. Yes, sir.

Chairman Geiger: If you had found a variation of pipe in the ground from the standard or what you have called the nominal diameter of that pipe, would you say that the difference was due to deterioration after it was laid in the ground or depreciation or would it more likely be due to the mill not having rolled to the standard diameter? Which is the more likely?

A. It is more likely to be due to the variation in the mill and not to the corrosion, not due to the corrosion. But in certain cases it is evidently, as an inspection will show, due to the corrosion. But I penalized the company, even when I knew it was not due to that, but it was due to the variation in the mill.

Q. But you did not penalize them if you did not find it less than the nominal?

A. That is true.

Q. And yet for aught you know, it might originally have been—the actual size might have been in excess of the nominal?

A. Of course, that is true, yes.

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[fol. 687] Q. I am interested in another feature. I think I touched on it yesterday. Yet my memory fails me. You take an inspection and you see a pit in pipe 1 you go to another sample and you see a pit of the same depth, we will say of the same size, but that has other little pits started. Now, I think you have said that in each case you consider merely the deepest pit?

A. No, I don't think I said that.

Q. Then I have misunderstood you, what did you say?

A. I would consider not only the deepest pit, but the general corrosion changes evident on both pipes before I would make my field estimate.

Q. Well, where would you get the per cent in? I thought this matter of calculating the deepest pit was an accurate mathematical thing.

A. It was accurate in the office and more or less accurate—I gave the deepest pit weight in the field in making my estimate also, though it might not have been quite accurate in the field. Therefore, I made another calculation in the office, which was accurate, and if I was short in the field——

Q. Well, let us take these two cases. And I am not criticising, even though I am talking loud. I am trying to find our your theory and your reason. Take these two cases I have given you. In the one you find a pit going down very considerably; a real genuine pit, but in another piece over here you find a pit of the same depth, of the same character, but over here you find some other little pits.

A. Yes, sir.

Q. Now, how do you work out your formula for those respective observations?

A. I would measure the depth of that pit, the deepest pit on the one with the one pit, and I already know the

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[fol. 688] nominal diameter or nominal wall thickness of that particular piece up there. I would estimate the per cent of penetration, and my field estimation in that case with the one pit would be a per cent somewhat greater than half of the deepest pit, the percentage of the penetration of the deepest pit.

Q. Why one half?

A. Well, it is not—that is because I figure that the weight due to pitting is only—that the weight due to a pitting should be calculated by factor two instead of some other figure, three or more.

Q. What over here where there are some other pits started or have started?

A. I would give that—I would consider that deepest pit just like I did in the first one, but I would be more likely to penalize also for the other pits.

Q. I thought you had a formula. You said "more likely". I know you would do it one way or the other. What did you do? What was your method, what was your theory, what was your formula? You see what I am getting at. I am not criticising you now. It is a point of view.

A. There is no fixed formula, although I said I considered pitting as well as the general corrosion which I found on these pipes.

Q. Really, really, Mr. Mullin, am I not pretty nearly right when I submit to you that what you did was to uncover and look at it and give your personal judgment; isn't that about what you did?

A. That is true, based on the experience I have had with pipe in the last six or eight years.

Q. And really, putting it up to you now, all of these elaborations go right back to that personal judgment, don't they?

A. That is true, yes, sir.

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[fol. 689] Q. Now a few more——

Chairman Geiger: May I ask one question right here?

Mr. Butler: Yes, sir.

By Chairman Geiger:

Q. Now, assuming that you were examining a pipe that is uniform and of a given quality; and you make one inspection point and make your observation and then go a mile away from your first inspection point to the second inspection point, and making the inspection at the second opening, finding the same or different conditions of deterioration at these two openings; how then do you allocate to the pipe that is between the two openings, which we will assume is a mile, its condition by the condition you found at those two openings?

A. Well, I depreciate—I give equal weight to each inspection of a particular size of main, and therefore the pipe in there would be depreciated on the basis of the average depreciations of the inspections of that size main.

Q. If two were all of them?

A. If two were all that were made.

Q. But in actual competition or estimation you took all of the openings that were made of a given diameter and size of pipe, and from that estimated the present condition of all the pipe in between the openings?

A. That is true, yes, sir.

Q. All right. *A.* And you gave that estimate of the pipe between the openings on the basis of an average of the condition of the pipe as disclosed at the openings which you did make?

A. That is true of the pipe between the inspections and also all other pipe in the system.

Chairman Geiger: That is all, Mr. Butler. Excuse me for interrupting.

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[fol. 690] Mr. Butler: No, as I said, Your Honor, I think all of these questions are good and help us along.

By Mr. Butler:

Q. Does a pipe ever depreciate on the inside?

A. Natural gas mains on distribution system such as Columbus depreciate practically none on the inside.

Q. Do they deteriorate some on the inside?

A. It is possible they might.

Q. Have you ever seen any deterioration?

A. I have seen a slight rust which you can brush off with your hand or a brush. You might call it depreciation but it really hardly amounts to that.

Q. Then as I understand you there is no form of electrolysis that puts its results on the inside of the pipe?

A. No, sir, there is not in gas mains. There might be possibly in water mains where current would flow around through the main and back again to some other point on the inside, but that could not take place in the gas main.

Q. Have you studied the history of electrolysis in this city in respect to the various mains, including the water mains?

A. I know a great deal about the history of electrolysis in Columbus here, having been electrolysis engineer for the gas company for possibly three years.

Q. For three years?

A. Yes, sir.

Q. Well, you have gone back and gathered up the history of the past, have you?

A. Yes, sir.

Q. With respect to the water mains and all that?

A. I know some history in regard to the water mains. However, my history as to that is very meager I will say.

Q. That is what I was getting at. When you say it is

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[fol. 691] meager that answers it. Now I think I shall trouble you a little bit further. I want you to take inspection No. 1. Take your field notes and read just what you entered on your field notes when you made the inspections.

A. Inspection No. 1, the date was January 8th, 1930, and I signed the inspection, T. E. Mullin, marked it Columbus, Ohio, Columbus Gas & Fuel Company; map No. 1 N-1E-1; the size pipe was four inch; location of inspection point was Wall Street eight foot north of Hickory Street, about four feet east of West curb line, about six foot north of four inch gate. The covering over the pipe was 32 inches. The soil, sandy, clay and gravel. The paving surface was brick and sand. The calipered outside diameter was 4.51 horizontal and 4.50 vertical. The field estimate of condition was 80 per cent. The deepest penetration was .08 of an inch. Shall I read my description down at the bottom of the inspection?

Q. You go on through.

A. I have some more here if you want me to read it.

Q. Did you enter it that day at the place of inspection?

A. Yes.

Q. Well, read it.

A. The pipe was wet. In parentheses, rain. Soft black rust, scraped off easily. When washed, surface was clean, disclosing patched and pitted areas, along top surface. The average depth of corrosion was .04 inches, with a maximum in pits inside of patches of .08 of an inch. The areas were white metal. Bottom and sides showed a hard thin scale, with no evidence of corrosion. Then I have another note here which says six inch main deeper than four inch, with tap to regulator on each side of alley. Second four inch appeared about in same condition as the four inch inspected.

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[fol. 692] Q. What do you mean by patches, number of patches?

A. What I call patches are areas of corrosion.

Q. Like a patch of weeds?

A. Yes, sir, that is true.

Q. Now, how did you make up that field loss of 20 per cent? Now, just explain how you reached that.

A. Of course, I had the main there too look, and I knew that the wall thickness of that main was .237, that is, almost .24 of an inch. Now, the deepest pit that I measured there or the deepest that existed was .08, which would be 33 per cent, penetrated, that is, the wall would be 33 per cent penetrated in its deepest pit. But I did not depreciate it 33 per cent, but I depreciated it a figure less than 30

per cent. Factoring this 33 per cent by two, you would get something like 17 per cent. But instead of giving a 17 per cent loss, I gave a 20 per cent loss, which is greater than the deepest pit, factored by two, and, other things being equal in the pipe at the point of inspection, that would be my estimate of the pipe at that point.

Q. What effect did you give to the diameter of the pipe?

A. In that case the average diameter there is 4.50, which is the nominal diameter, and I gave perhaps no weight to that, because it showed no loss.

Q. And you assumed for the purposes of this the nominal thickness of the pipe?

A. Yes, sir.

Q. Go down to No. 28, where you have a one per cent field loss. Tell us how you got that.

A. I might add also on that first inspection that the data from the company records showed that the date of installation of that main was 1891, about 1891, and it is a four [fol. 693] inch wrought iron pipe, screw pipe. Inspection No. 28 is as follows: It was made on January 10th, 1930——

Q. You need not give the little details, but rather what you discovered from your field notes and tell us then how you reached the one per cent?

A. This was a six inch wrought steel main, located on Long Street, 50 foot west of Brunson Avenue, about twelve foot south of curb line in grass space. The cover was 36 inches and yellow clay soil. The calipered outside diameter of that was 6.61 and 6.62. I made a note there that the general condition was perfect. The field estimate was 99 per cent. The surface had a uniform coat of pitch paint intact which, when scraped off, showed metal in perfect condition, no rust or corrosion whatever.

Q. Why did you take off one per cent?

A. There wasn't much reason for it.

Q. Was there any reason?

A. The diameter, the nominal diameter, the measured diameter is a trifle less than the nominal diameter should be. I possibly deducted one per cent on account of that.

Q. I know you possibly could but did you?

A. I must have, yes.

Q. You are not very clear about it?

A. Of course, I cannot remember what I did on each one of these inspections.

Q. When was that put down?

A. About 1924 or '25 and the records show a six inch wrought steel screw pipe.

Q. Painted?

A. Painted, yes, sir.

Q. I want you to turn now—once more and then I am through—to I think it is No. 50, where you show 90 per cent

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[fol. 694] for that loss.

A. Inspection No. 50, that was an inspection of a twelve inch wrought iron main located on Fifth Avenue, 400 feet east of Twentieth Street. The cover was 32 inches. The soil was yellow-blue clay. The outside diameter which I—well, I didn't measure the outside diameter of that pipe. I have it marked here in that place twelve inch O. D. Pipe, that is, twelve inch outside diameter pipe; the general condition was poor. The field estimate was ten per cent. Top and sides showed scattered patches and pits, not deep. A saddle back clamp. The water was up to halfway around pipe. Scraping bottom with file a slight leak developed and I stopped examination. Deep pits could be felt underneath, that is, on the bottom.

Q. You took 90 per cent off?

A. Yes, sir.

Q. Why did you leave ten per cent?

A. Well, the main was in working condition and it was repairable.

Q. It had been repaired once?

A. Yes, sir, it had all been repaired once in that location.

Q. You think that was still repairable?

A. Yes, sir, it was a large twelve inch main. The wall thickness was pretty heavy.

Q. That was an old pipe, wasn't it, or a young pipe?

A. Yes, sir, it was an old pipe.

Q. How old?

A. The date of installation from company records, about 1900; twelve inch O. D., that is, twelve inch outside diameter, wrought iron, plain end pipe.

Q. I want you to turn to another 90 per cent field loss. That is 207. That must be right in the same locality?

A. Inspection No. 207. That was made on January 27th, 1930. It is the inspection of a ten inch wrought iron pipe,

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[fol. 695] located on Fifth Avenue, 200 feet east of the Big Four Railroad, and just inside of the sidewalk. The cover was thirty inches. The soil was bluish clay and gray shale. The outside diameter measured 10.75. My description at the bottom says that it was in very bad shape, soft, graphite-like corrosion, rust all over. No hard scale except here and there. When washed off deep patches at pits covered most of surface. Same condition underneath also. Metal grain exposed in patches. Some patches as much as three inches by three inches and as deep as .15. Leaking where a hole had penetrated at the threads. The company records show that main to have been installed between 1896 and 1907. Shows it also to have been a ten inch wrought iron screw pipe.

Chairman Geiger: What was the inspection number of that?

The Witness: No. 207.

Q. You still kept ten per cent?

A. Yes, sir, I still kept that ten per cent.

Q. Did you find any pipe that you depreciated more than 90?

A. I don't believe I did.

Q. Could you have found one much worse than this or the other one that you just described?

A. It is possible, oh yes.

Q. Did some of these inspections of the old mains lead you to think that possibly there were whole sections in that condition?

A. No, there really was not, with the exception probably of this one main on Fifth Avenue, the figures as to which were read. That area there is, I say, bad soil, and it is also affected by electrolysis, or has been in the past, being in an area in proximity to the Milo sub-station of the Columbus Railway Power & Light Company and subject to some extent to electrolysis.

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[fol. 696] Q. Had the electrolytic action ceased?

A. Yes, to a great extent, practically ceased.

Q. Well, on this particular pipe?

A. Yes, sir, as far as I know that action has ceased. They have been taken care of within the last five or six years.

Q. Is it possible by inspection for you, an engineer, to say, "Well, there has been that action, but there is none now?"

A. No, sir, it is not possible.

Q. It is not possible. How do you determine that? Whether it is going on now?

A. Well, you can determine that by the electroysis surveys.

Q. By some delicate apparatus?

A. By some delicate electrical instruments, yes, sir.

Mr. Butler: I think that is all for the time being, Mr. Mullin. We will probably want to examine the field notes.

By Chairman Geiger:

Q. May I ask a question right there please? You have just testified as to your inspection No. 50 and your inspection No. 207, both of which disclosed pipes in condition of 90 per cent depreciation, or present value ten per cent?

A. Yes, sir.

Q. Now, to what length of pipe did you apply that depreciation?

A. In that one case, the inspection No. 207, that was on a ten inch wrought iron main. Now, my depreciation on ten inch wrought iron pipe is an average of two inspections, that one and another one, which give an average condition for ten inch wrought iron to be 17½ per cent.

Q. Depreciation?

A. No, condition. That is condition. That is not depreciation. That is 17½ per cent.

Q. And one was ten per cent condition and the other was

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[fol. 697] 17½?

A. No, one was ten and one was 25, I believe, giving an average of 17½ per cent.

Q. The other inspection was 25 per cent?

A. Yes, sir, condition.

Q. What was the length of the pipe, ten inch pipe?

A. Ten inch wrought iron pipe——

Q. Governed by those two inspections?

A. 11,455 feet.

Q. About two miles?

A. Yes, sir.

Q. Now, do you think by making two inspections in a distance of two miles, covering two miles of pipe, that that is sufficient to enable you to come to the conclusion as to the present condition of that entire two miles by taking an average of the 25 per cent condition found at one place and the ten per cent found at another? Might it not have been quite possible that had you made other inspections within that limit that you would have found other pipe of a different present condition per cent, more of it at ten per cent? Of course, you might have found more of it at 25 and you might have found some of it at 50. But you think two inspections on that length of pipe, two miles, is sufficient to enable you to determine its present condition?

A. It is my opinion, if I had made more inspections on ten inch main, I would probably have found better pipe and possibly some worse. But on the theory that the average condition which I arrived at is an average applicable to the system as a whole, on that theory I would have to be satisfied with that 17½ per cent, which, in my personal opinion, is not really the condition of all of the ten inch pipe in this system. I think it would actually be a whole lot better than that.

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[fol. 698] Q. It is giving the benefit of your estimate of those two inspections to the city rather than to the company?

A. Yes, sir.

Q. Take your inspection No. 50. That was a four inch cast iron pipe.

A. No, it was not cast iron. It was a twelve inch wrought iron.

Q. Oh, I beg your pardon. I thought it was four inch.

A. The first one was, I think.

Q. That disclosed a present condition of ten per cent.?

A. Yes, sir, it did.

Q. Now, what was the nearest inspection on the same kind of pipe you made to that, or how many inspections did you make in the total length of that pipe?

A. On the twelve inch wrought iron pipe I made three inspections. Now, wait just a minute.

Chairman Geiger: I had that marked 50, six inch instead of twelve inch.

Mr. Turner: 50 is twelve inch.

The Witness: On the twelve inch wrought iron I made four inspections.

By Chairman Geiger:

Q. What was the total length of the twelve inch cast iron pipe?

A. 11,375 feet.

Q. That is an average of one inspection about every half mile?

A. That is true, yes, sir.

Q. Now, what was your final conclusion as to the practically two miles of twelve inch pipe?

A. The average condition of the twelve inch wrought iron pipe was 53 per cent.

Q. Now what brought it up from the depreciation of 90 per cent——

Mr. Turner: Your Honor has caught that wrong—no, 386 [fol. 699] you are right and I am wrong. Field loss 90 per cent. I beg your pardon.

Q. But I understand that inspection No. 50 disclosed a ten per cent. condition at present?

A. That is true, yes.

Mr. Turner: That is correct.

Q. And your total present condition of your average present condition of the entire two miles of that pipe is 50 per cent?

A. 53.

Q. What other inspections brought it up from the depreciated condition of 90 per cent. to an average depreciation of 50 per cent.?

A. There were three other inspections made on twelve inch pipe. Shall I refer you to them?

Mr. Turner: Yes, go ahead.

Q. How near were they to this point?

A. I will have to refer to my notes.

Mr. Turner: Wait a minute now.

The Witness: It will only take a minute.

Mr. Turner: Look at 75 and you get one.

The Witness: Inspection No. 75 is an inspection of twelve inch, and it is located on Brentnell Avenue opposite the St. Marys Measuring Station.

Q. Now, there is the point I was trying to get at. You average twelve inch pipes and get the average of your twelve inch pipes in different locations. Now, wouldn't the fair thing to do be to give us the length and the present conditions on that entire pipe that was continuous with the inspection No 50? Would you make another inspection adjacent to inspection No. 50?

A. There is one on the same line, yes, sir.

Q. What does it show?

A. This one on Brentnell Avenue I just read you. I

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[fol. 700] will give you that.

Q. Is that a continuation of this same line?

A. Yes, I think it is. It is a branch from this line. It leads in that general direction. It comes from the St. Marys Measuring Station and goes east and west on Fifth Avenue.

Mr. Butler: What number is that?

The Witness: Inspection No. 75. The condition of that main at that location was 60 per cent.

Mr. Butler: What was the age of that one?

The Witness: The age of that one was—it was installed about 1900, and the age of inspection No. 206 was 1900, and it also showed a condition of 60 per cent. That was located on Fifth Avenue east of St. Clair Avenue.

Q. Now, isn't this true, or is it true, that in order to get the fair average, you must take the entire length that is a particular condition of depreciation? If it is 90 per cent. depreciated, you must find out how many miles or feet of pipe is in 90 per cent. condition, and then find out how many feet in 80 per cent. condition, and so forth? As I understand, all you have done here is to take four inspections of twelve inch pipe and apply it to the entire length of twelve inch pipe, irrespective of how great a length is 90 per cent. condition and how great a length is 60 per cent. and how great is 50?

A. On my method I assumed one-fourth of the twelve inch was ten per cent. one-fourth was 60 per cent., another fourth another per cent. and the other fourth whatever its condition was as I gave it to you.

Q. Might it not have been possible that 90 per cent. of it was 10 per cent; that this ten per cent. pipe might have been

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[fol. 701] 90 per cent?

A. It is not very likely, because I looked at twelve inch in three other places.

Mr. Calland: You don't get that answer, if Your Honor please.

Chairman Geiger: I do not understand that he looked at that pipe.

Mr. Calland: Yes, he looked at it at three other places, this same Fifth Avenue pipe line.

The Witness: Those three were on the same length of pipe, that is the Fifth Avenue, all branches from Fifth Avenue. That is where most of the twelve inch pipe in the system lies, right up in that territory.

By Chairman Geiger:

Q. Was this twelve inch pipe that showed a condition of ten per cent. connected with the twelve inch pipe that showed a less per cent. of depreciation and a greater per cent. of present condition, so that it all made one length of pipe?

A. It is, yes, sir.

Q. Now, did you examine to see how much in distance there was of the soil that was peculiar to the inspection No. 50, which disclosed a ten per cent. present condition, in comparison to the soil that was of the condition that only disclosed a depreciation of 50 per cent.? That would be the thing that would make depreciation, together with the proximity to an electric wire?

A. Well, there are a lot of factors in connection with the soil which would have an effect on it. A great many factors cause soil corrosion. A great many of them might be present in the soil which you could not detect by an examination by the eye, which you could not detect by an examination by the visual examination of the soil.

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[fol. 702] Q. The thought I had generally was, if you find a pipe that was ten per cent. present condition, that it would be safe to rely upon inspections every half mile to deter-

mine what the entire length of two miles of that pipe was, what condition the entire two miles of that pipe was?

A. I think it would be a pretty fair method.

Chairman Geiger: All right then. That is all right. That is what I want to know.

Mr. Turner: Would Your Honor indicate to the company how much of the pipe you would desire uncovered to convince you as to the condition of it? We have only followed the practice among engineers, and we are willing to conform to anything within reason to give the Commission all the data it wants.

Chairman Geiger: Well, I would have no opinion to express on that.

Mr. Turner: I thought you expressed an opinion.

Chairman Geiger: I am just asking whether in his judgment four inspections in two miles, where he found one inspection about ten per cent. present condition, is sufficient; and he says in his judgment it is. Now, that is all we have to say about it.

Mr. Turner: From the manner in which it was asked I thought you were objecting to it and I wanted to try to comply——

Chairman Geiger: Oh, no, I want to find out on what basis his judgment is made.

Redirect examination.

By Mr. Turner:

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[fol. 703] Q. Mr. Mullin, is it customary among engineers to spot check property like this, or do they uncover a mile or two of it right along the pipe? What is the practice?

A. The practice in cases like this is to spot check it similar to what I have done.

Q. You have spot checked this twelve inch pipe——

Mr. Butler: When you speak of the practice, do you mean in rate cases?

Mr. Turner: I mean in actual practice; I mean for any purpose, whether for rate cases or for purchasing or for keeping your property up or seeing that there are no leaks,

or seeing that your property is in proper condition; irrespective of rate cases, how is it done?

The Witness: In the case of rate cases it is done as I have done it. For other inspections it may be done differently.

Q. How would it be done differently in the other cases? Tell us.

A. There are a number of ways that pipe could be tested. One of them is the bar test.

Q. What would be the bar test?

A. That is where they might be looking for gas leaks. They drive bars down over the main to test it with a match to see if the gas is escaping.

Q. You would not look at the pipe that way?

A. No, you would not look at the pipe that way. That would be another test which is carried out all of the time.

Q. Is the bar test used regularly by the Columbus Gas & Fuel Company?

A. I am quite sure it is.

Q. All right, go ahead, give us the other tests.

A. A line walker will sometimes walk over a line and detect the odor of gas or to see whether the vegetation

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[fol. 704] has been destroyed, or discolored, or snow discolored, or maybe streams of water bubbling from escaping gas. That would be another inspection.

Q. All right.

A. That is all, I believe.

Q. Do you know whether or not the Columbus Gas & Fuel Company makes these inspections to see whether there is a line lost any place?

A. I know they do.

Q. Whether their pipes are in good condition?

A. Yes.

By Chairman Geiger:

Q. Is there an instrument generally in use by those who have pipe lines in the ground or water lines that will detect electrolysis from the surface without taking the soil away?

A. Well, electrolysis is rather a large subject, and these electrical instruments—from measurements made by electrical instruments or different types, the presence of danger from electrolysis can be detected. But whether the elec-

trolysis has actually depreciated the pipe cannot be detected unless the pipe has been uncovered possibly.

Chairman Geiger: All right, that is all.

Q. Now, in taking the measurement in the field, as I understand it, you checked that diameter measurement against the office records to see whether or not it was greater or less than the office record; is that correct?

A. Yes, sir, I checked the nominal sizes of pipe.

Q. Now, if you found any diameter larger than the nominal size, did you take credit for the company, or what did you do?

A. You are confusing there.

Q. All right. I am just trying to straighten out some of the cross-examination or make myself understand some of the cross-examination.

A. Are you referring to a nominal diameter of the pipe which is standard for pipe of certain sizes, or are you re-

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[fol. 705] ferring to the company records as to the size of main that is located at that point.

Q. I am talking about the comparison between your field notes, made in the field, and your measurements made in the field, with your examination of the records for the nominal diameter?

A. I did not examine the records for nominal diameter, what I call nominal diameter. That is the way it is headed on my inspection, nominal diameter. In each case I checked that, yes.

Q. Now, if you found the diameter, the nominal diameter, to be less than the actual measurement that you made in the field, what did you do if there was such a case?

A. In each case the nominal diameter—the office records showed the field inspections checked with the office records as to the size of the pipe in each case.

Q. In each case?

A. Yes, sir.

Q. Am I correct in understanding that electrolysis or pitting comes only in a moist soil where the current leaves the pipe?

A. That is true. Moisture is required for corrosion. It is considered to be required for corrosion, according to the

electro-chemical theory of corrosion; moisture is required.

Q. Did you testify in the Federal case?

A. I did.

Q. Who cross-examined you there?

A. I am not sure whether it was Mr. Leach or Mr. Butler. I am sure Mr. Butler did.

Mr. Butler: That is why you were preparing for me?

Mr. Turner: That is the reason I am asking him.

Mr. Butler: I don't recall it though.

Q. Did you, bearing in mind your cross-examination, attempt to meet all of the objections to that method of pro-
[fol. 706] cedure in this case?

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A. Yes, sir, I did, although I did not sponsor that method myself.

Q. That was not your method, was it?

A. No, sir.

Q. But you tried to comply with Mr. Butler's wishes so far as you could, didn't you?

A. Possibly I am glad I did comply with them, although I don't know what his opinion might be.

Mr. Butler: I think it is only fair to Mr. Mullin that you would let him look at the record before he testifies as to what happened. I think he will find much less happened than he thinks. Of course, he was a part of the combination that did their work. But I doubt if he testified.

The Witness: No, I did not testify in regard to depreciation. All I did was to make laboratory measurements of the pipe samples which were cut, and made some of the calculations.

Q. In that case they cut pipe samples and had them examined in a laboratory, did they not?

A. That is true, yes, sir.

By Chairman Geiger:

Q. Let me ask one question right there, and it will be short. In your recent examination did you make an inspection at any point where you had formerly made an inspection in the trial of the case before the Federal Court?

A. Well, I am sure that some of the locations at which I inspected pipe this time would be very close to the locations at which samples of pipe had been cut.

Q. Now, did you compare the condition you found at the time of the trial of the case in the Federal Court with the condition you found in the same vicinity by your present inspection in order to determine what progress the deterioration had made during those two periods?

A. I did not, no sir.

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[fol. 707] Q. How long was the period between the two inspections?

A. Well, that was 25 and today. I believe five years.

Q. Well, now, let me ask you, would it be possible to determine with some accuracy the progress of depreciation over a period of five years by comparing the condition of the pipe as it was found in 1925 with the condition of that same section of pipe in the same locality as it was found in 1930?

A. I don't think so in this case, because there were two altogether different methods followed in making the estimates of depreciation. However, that could be done, and it is being done by the Bureau of Standards right now. They have soil corrosion investigations in progress, and have had for the last ten years.

Q. I was just asking you whether or not your records are such that if you had a record made in 1925 and another record made in 1930, you could determine the progress of depreciation in the last five years?

A. It would be a very rough approximation, and due to the fact that another man had worked on it and not myself, I do not think it could be relied upon for that purpose.

Q. Someone may be wrong, you or the other fellow?

A. Yes, sir.

And thereupon a recess was had until 1:40 o'clock P. M. of same day (Wednesday, December 10, 1930.)

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[fol. 708] Afternoon Session, Wednesday, December 10, 1930

And also—

THOMAS E. MULLIN, resuming the stand for further cross-examination, having been heretofore duly sworn, continued his testimony as follows:

Cross-examination by Mr. Butler:

Q. Mr. Mullin, as we were adjourning, you were kind enough to hand me the page which is designated "Miles of Service Lines", as set up in the Appraisal of December 31st, 1929; what does that show?

A. That shows the footage in pipe of the services which were set up in the inventory as existing within the City of Columbus as of that date.

Q. That gives a total of 516,672 feet, or 97.85 miles?

A. That is right, yes, sir.

Q. And now, you made how many inspections?

A. I made 123 inspections of service lines.

Q. Of about three feet each?

A. Yes, sir.

Q. In other words, you saw 369 feet out of 516,672 feet?

(No reply.)

Mr. Butler: If there be no objection, Mr. Turner, I should like this copied right into the record because when we want the facts we need not go to the large volume.

Mr. Turner: All right.

And thereupon the document last above referred to is
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[fol. 709] copied into the record and in the words and figures following, to wit:

"Miles of Service Lines as set up in the Appraisal of Dec. 31, 1929:"

1,027	×	12.12	12,447
21,601	×	12.12	261,804
3,326	×	8.87	29,502
1,191	×	8.87	10,564
11,716	×	12.12	141,997
1,352	×	8.87	11,992
104	×	8.87	922
2,682	×	12.12	32,505
308	×	8.87	2,731
77	×	8.87	683
276	×	12.12	3,345
2	×	34	68
156	×	12.12	1,891
17	×	34	578
29	×	12.12	351

5	×	34	170
1	×	12.12	12
2	×	34	68
126	×	12.12	1,527
63	×	7.95	501
186	×	12.12	2,254
13	×	7.95	103
40	×	7.95	318
24	×	12.12	291
6	×	7.95	48
			516,672 feet

516,672 divided by 5,280 equals 97.85 miles.

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[fol. 710] Q. Mr. Mullin, I think you have also a compilation which shows the depreciation as to each type of pipe?

A. Yes sir, I have.

Q. Will you let me see that for a moment?

A. Yes, sir. (Producing same.)

Q. How many pages?

A. There is five pages.

Q. That is, "Application of Pipe Inspections to Depreciation of Mains"?

A. Depreciation of mains and services.

Q. That includes services?

A. Yes, sir.

Mr. Butler: There are five pages of that, and if there be no objection on your part, without further delay I shall ask Mr. Okey to copy it right into the record.

Mr. Turner: All right.

And thereupon the document last above referred to, consisting of five pages, is copied into the record, pursuant to the foregoing agreement, and is in the words and figures following, to wit:

[fol. 711] 398

Application of Pipe Inspections to Depreciation of Mains

Cast Iron Mains M. P. and L. P. Within City

Size	Length of pipe	No. of inspections	Average per cent loss	Per cent condition	
6"	149,362	14	17.1	82.9	
8"	106,940	15	8.8	91.2	
10"	109,405	15	6.8	93.2	
12"	14,894	2	13.5	86.5	
16"	3,653	..	10.9	89.1	Use average of
20"	3,783	..	10.9	89.1	All Sizes
24"	499	..	10.9	89.1	
		46			

[fol. 712] 399

Wrought Iron Pipe M. P. & L. P. Within City

Wrought Irons

Size	Length of pipe	No. of inspections	Average per cent loss	Per cent condition	
1" Scr.	55	..	31.1	68.9	
1¼" Scr.	4,388	..	31.1	68.9	Av. 2" Scr.
1½" "	1,573	..	31.1	68.9	"
2" "	127,470	18	31.1	68.9	
2½" "	13,208	2	18.5	81.5	
3" "	293,776	25	22.8	77.2	
4" "	488,267	58	22.0	78.0	
6" "	17,390	4	23.5	76.7	
8" "	1,712	..	23.3	76.7	Av. 6" Scr.
10" "	11,455	2	82.5	17.5	
12" "	90	..	47.0	83.0	Av. 12" O. D. P. E.
6" P. E.	10,589	..	23.3	76.7	Av. 6" Scr.
8" P. E.	8,335	..	23.3	76.7	" " "
12" O. D. P. E.	11,375	4	47.0	53.0	" "
		113			

[fol. 713] 400

Wrought Steel Pipe M. P. & L. P. Within City

Wrought Steel Screw

Size	Length of pipe	No. of inspections	Average per cent loss	Per cent condition	
1¼"	60	..	22.5	77.5	Av. 2" W. S. Scr.
1½"	616	..	22.5	77.5	" " " " "
2"	39,207	2	22.5	77.5	
2½"	25	..	22.5	77.5	Av. 2" W. S. Scr.
3"	48,649	6	30.0	70.0	
4"	385,208	27	9.3	90.7	
6"	135,906	10	3.5	96.5	
8"	53,257	7	6.0	94.0	
10"	12,938	1	20.0	80.0	
12"	5,790	..	20.0	80.0	Av. 10" W. S. Scr.
8" W. S. Copper Alloy	5,720	2	6.7	93.3	

Wrought Steel P. E.

Size					
6"	5,434		3.5	96.5	Use 6" Scr. W. S.
8"	7,191		6.0	94.0	" 8" " "
10"	195		20.0	80.0	" 10" " "
12" I. D.	2,139		20.0	80.0	" " " "
12" O. D.	2,596		20.0	80.0	" " " "
16"	1,120		20.0	80.0	" " " "
		55			

[fol. 714]

401

Outside the City for Service Within City

Total of 27 Inspections on Outside City Mains

Size	Length of pipe	No. of inspections	Per cent condition	Average per cent loss	
1" W.S. Scr.	45		77.5	22.5	Use Av. of 2 W. S.
1½" W.S. Scr.	45		77.5	22.5	" " " " "
2" " "	11		77.5	22.5	" " " "
3" " "	3,364	1	80.0	20.0	
4" " "	12,900	2	88.5	11.5	
6" " "	4,812	1	95.0	5.0	
8" " "	29,128	4	96.8	3.2	
10" " "	10,018	4	72.0	28.0	Av. 10" Scr. 10" P. E.
12" " "	609		80.0	20.0	
16" " "	63		72.9	27.1	Av. 10" & 12" Scr. & P. E. Inspections
18" " "	64		72.9	27.1	
20" " "	144		72.9	27.1	
2" W. I. Scr.	60		68.9	31.1	Av. 2" W.I. Inside Cy.
10" W. L. Scr.	1,632		72.0	28.0	10" W. S. Average
12" W. I. Scr.	3,052	3	84.7	15.3	
6" W. S. P. E.	17		95.0	5.0	2" W. S. Scr. Insp.
8" " "	19,021	5	68.0	32.0	
10" " "	20,102	2	72.0	28.0	Av. 10" Scr. W. S. I.
12" I.D.W.S.P.E.	5,196		80.0	20.0	Av. 12" Scr. W. S. I.
12" O.D.W.S.P.E.	27,571	4	72.5	27.5	
8" W.L.P.E.	2,984		81.2	18.8	Av. 8" W.S. Scr. P.E.
		27			

[fol. 715]

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Services Within the City

Size	No. of inspections	Total est. loss	Average per cent loss	Average condition
1"	4	106	26.5	73.5
1¼"	56	1243	22.2	77.8
1½"	25	605	24.2	75.8
2"	6	132	22.0	78.0
3"	1	2	2.0	98.0
	92	2088	22.7	77.3%

77.3% condition applied to all services.

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[fol. 716] Q. 361 inspections on Mains?

A. No, there is 392 inspections; that includes inside and outside the city; includes medium pressure mains outside the city as well as the mains inside the city.

Q. That is 1568 feet, and the total length of those mains is 2,200,000 feet plus, isn't it?

A. I imagine so; something like that.

Mr. Butler: I think, Mr. Mullin, that is all we have at this time.

Redirect examination.

By Mr. Turner:

Q. Mr. Mullin, you were asked about painted pipe, dipped pipe; that sort of pipe costs more money than undipped or unpainted pipe, does it not?

A. Yes, sir, it does.

Q. And in the valuation figures put in this case, are dipped pipe or painted pipe costs used, or is the cost without painting and without dipping used?

A. I am quite sure it is cost without dipping or painting; I am not sure about painting; there might be some cost on paint, but I doubt it.

Q. Now is anybody able to tell, looking at a pit, whether it will stop where it is or will go further?

A. No, I don't believe they are.

Q. Now, experience shows, does it not, that some of these pits do continue and others do not continue on through the pipe; is that correct?

A. That is partly true—yes, sir, that is true.

Q. Then you started to explain this morning a formula

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[fol. 717] that you used to get at an average, and I do not think that you made that clear enough to all of us. I would like to have you go into that a little more at length.

A. In making my field estimate, do you mean?

Q. Yes.

A. Rather than my office calculation?

Q. Yes, either one of them.

A. Well, in making a field estimate I give some weight to the factor of pitting. The depth of a pit really would not indicate the future life that is possible on an existing main, but I give it some weight, and the weight I give it

was—I factored the penetration, the per cent penetration, by two usually—or by two, and my field estimate was based somewhat near that figure, usually less than two instead of greater than two.

Q. Did you find some of the pipe or services that were tarred or painted?

A. I did, yes, sir.

Q. You were asked this morning about the possibility of comparing the depreciation that might have progressed since the Federal Court appraisal with the depreciation or per cent condition at that time; I want to ask some questions to develop some facts in respect of that situation. Do you recall how many miles of pipe were involved in the Federal Court valuation.

A. There were approximately 300 miles of main at that time.

Q. And approximately 400 miles now?

A. That is true, yes, sir.

Q. And do you know about how many miles of new pipe are in the present appraisal; that is, new since the Federal Court case?

A. There is approximately 100 miles of new main.

Q. Now the pipe is sold according to diameter, is it not?

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[fol. 718] That is, wrought iron pipe, steel pipe and cast iron pipe are each respectively sold according to their diameter, is that correct?

A. That is true, yes, sir.

Q. So that the smaller the diameter, the less the cost, is that true?

A. That is true in all cases, yes, sir.

Q. And if you reduce the diameter that you found in your field inspection by comparison with the typical—or what do you call it—nominal diameter, you were not giving the company an advantage, were you?

A. No, sir, I was not.

Chairman Geiger: When you buy six inch pipe do you buy inside diameter or outside diameter six inch?

The Witness: Inside diameter.

Chairman Geiger: Well, you did not measure the inside diameter at all; you measured the outside diameter?

The Witness: No, but a six inch main has a nominal outside diameter which does not vary; the nominal diameter

of a six inch main is 6.625; that is speaking of steel and wrought iron pipe.

By Mr. Turner:

Q. And it is the 6.625 with which you compared your field notes?

A. That is true, yes, sir.

Q. I want to know whether you followed, in making these inspections, the usual practice followed by engineers in making similar inspections?

A. I know of some engineers who follow a similar practice, yes, sir; I can not speak for all engineers.

Q. Well, is the practice that you followed recognized as a proper one among engineers?

A. I believe it is, yes, sir.

Q. Did you seek, in making your inspection to get results

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[fol. 719] which would fairly show the condition of the various kinds of pipe throughout the City of Columbus?

A. I did.

Q. As I understand your method of arriving at a factor for depreciation, you made a number of spot checks of each kind of pipe; then you took the results of those inspections, those checks, and got an average factor that you applied to the entire amount of that particular kind of pipe?

A. That is true, yes, sir.

Q. Now, what do you say as to whether you got sufficient samples or made sufficient inspections to have a fair—or to reflect a fair condition of the entire pipe of the company in the city?

A. I think the inspections I have are sufficient in number to fairly represent that, and that they are fairly representative of the entire pipe system.

Q. You were questioned about the 12 inch main; among the inspections you made were No. 50 and No. 75 on that 12 inch wrought iron pipe; that is the fact as to whether that is a high pressure line?

A. That is a high pressure line, or what you might call a medium pressure line; it is within the city and is called a medium pressure main. It is not a low pressure main.

Q. Was there gas escaping from either of the points 50 or 75?

A. There was at point No. 50.

Q. Was there any escaping at point 75?

A. No, there was not.

Q. What other 12 inch wrought iron pipe inspections did you make other than 50 or 75?

A. Inspections Nos. 206 and 211.

Q. 206?

A. 211.

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[fol. 720] Q. I may have misunderstood you this morning in your testimony that you used the average of two points of inspection, or was that on the ten inch pipe?

A. That was on the 10 inch pipe.

Q. You used how many on the 12 inch pipe?

A. I used four on the 12 inch pipe.

Q. I wish you would look and see at how many points you made an inspection on your 12 inch pipe, wrought iron?

A. At two points.

Q. W. S. is wrought steel, is it not?

A. Yes, sir. I wish to add, however, that those two inspections on 10 inch wrought iron pipe are in the first group of inspections. There were two other inspections made on ten inch pipe in a second group of inspection.

Q. Who made the data on those two?

Mr. Butler: They are not in this?

The Witness: They are in the latter part of that, yes.

By Mr. Turner:

Q. Give me the second of the two you have just spoken about.

A. All right, No-. 268 and 272; the results of these two later inspections were not used in arriving at my depreciation for the 10 inch pipe, however.

Q. As set up in the exhibit?

A. As set up in the exhibit.

Q. Well, give them to me anyway.

Mr. Butler: No-. 268 and 272?

The Witness: Yes, sir. Do you want me to read what I found?

Q. Yes.

A. Inspection No. 268 was of a 10 inch wrought iron

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[fol. 721] pipe located on Fourth Avenue, 120 feet east of Fourth Street, seven feet south of the north curb.

Q. Go ahead.

A. The field estimate of condition on that inspection was 80 per cent.

Q. Give all the data?

A. "The outside diameter as measured was 10.75. Mud and clay came off easily; surface, mainly top surface, had a moderately thick black corrosion scale; when this was chipped off the surface showed a general corrosion; no noticeable pits or patches. The condition was quite good."

That is all on that, except that that was installed in 1896, and the Company shows a 10 inch wrought iron pipe.

Inspection No. 272; that was an extension of a 10 inch wrought iron pipe in East Alley, 15 feet north of Fourth Avenue, 26 inch cover, and the diameter was 10.75. I marked the condition of that 90 per cent. "Surface cleaned easily, showing a good condition, very little affected with corrosion; a thin scale; no pits or patches; very good shape; tested with a diamond point chisel and metal tested to be wrought iron pipe and not cast iron."

Q. Those two inspections were not used in arriving at your per cent condition as shown in the Exhibit already offered here?

A. That is true, yes, sir.

Q. Now those were made afterwards, were they?

A. Afterwards.

Q. After the exhibit was made up?

A. Yes, sir.

Q. Now what would be the effect of applying these other two percentages, that is, the percentages of inspections Nos. 409

[fol. 722] 268 and 272?

A. The effect of using all four inspections on the 10 inch wrought iron pipe would be to increase the condition from what it was with the first two, namely, 17½ per cent to an average condition of 51.1 per cent.

Q. Now did you make any subsequent inspections of the 12 inch pipe?

A. No, I did not.

Q. I see some 12 inch—what is this 279; what is that? Look at 279.

A. Well, 279 was an inspection of one of the medium pressure mains outside the city which are depreciated separately from the mains inside the city.

Q. Used partly in the city?

A. Partly used in the city, yes, but the mains outside the city were depreciated separately and I have a different average depreciation for the different size mains.

Q. Does the per cent condition shown here in the Company's exhibits which have been offered in this case, or brought into this case and referred to, and referred to as a result of your testimony, properly set forth your judgment of the present condition of the property?

A. To the best of my judgment that is the proper depreciation to apply.

Q. Have you, to the best of your ability and the best of your training and experience, set forth the depreciation, if any, from new reproduction cost, as of a date certain, for existing mechanical deterioration, for age, for absolescence, for lack of utility or for any other cause, of the pipes and mains and services of The Columbus Gas & Fuel Company?

A. I have.

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[fol. 723] Recross-examination.

By Mr. Butler:

Q. I thought you did not take age into consideration?

Mr. Turner: He did not. I understood him to say——

Mr. Butler: Oh, no——

Mr. Turner: Oh, well, I object to that sort of cross-examination; the record this morning said he did take it into consideration.

Mr. Butler: Oh, well, if you want to argue, Mr. Turner——

Mr. Turner: Well, but you are arguing with the witness all the time.

Mr. Butler: Well, I am cross-examining.

Mr. Turner: But cross-examination don't mean an argument.

Mr. Butler: Well, you started the argument.

Mr. Turner: Well, maybe I did at that; I did not mean to.

Mr. *Turner*: Mr. Mullin can take care of himself; I think he and I understand each other pretty well; we respect each other even if we disagree, and I am trying fairly——

Mr. Turner: Well, leave out the word "fairly" and I will be content.

Mr. Butler: No, you can strike it out for yourself; but I am trying fairly to find out from Mr. Mullin, and I have asked it two or three times, whether he did fix these conditions actually taking into consideration the age.

The Witness: In making any particular inspections I did

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[fol. 724] not consider the age; however, the condition as found was the result of the age of the pipe as much as anything else, so age was considered.

Q. Oh, that is interesting. Now you say that the conditions you found were the result of the age of the pipe; do I quote you correctly?

A. The length of time the main had been in the ground had something to do with the condition it was in at the present time, yes, sir.

Q. Well, you think you are satisfied with your explanation then, do you?

A. Yes.

Q. All right. Now, you speak about the regular practice—you see, I am trying to get you to testify rather than General Turner. Now you say that these methods that you used were the regular practice among engineers?

A. I said it was the regular practice among some engineers; I have known of engineers to follow this practice, including engineers for utilities commissions, but I do not know whether all engineers might follow.

Q. I think that is a fair answer. Now you have been inquired about the depreciation of the mains and the methods connected therewith in the former case in the Federal Court. There is not that method?

A. No, it is not.

Q. Was that method better than this method?

A. I do not consider it to be; I consider this to be the better method.

Q. Well, then even you engineers have been moving a little forward in the last four or five years?

A. That is possible.

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[fol. 725] Q. So that this regular practice that you talk about was not so very regular four or five years ago, was it?

A. Possibly not, no, sir.

Q. You did not use it in your own evaluation, did you?

A. However, in the old valuation, it was used by other engineers, which substantiated the depreciation set down, by cutting the sample, for there were engineers in this case who used this method.

Q. You thought that method was sufficient in the other case?

A. No, I did not have anything to say about that.

Q. Well, I know, but I am asking you now what you say about the method that was then used?

A. I think that would be one way of doing it, yes, sir.

Q. Well, it was one way of doing it, Mr. Mullin; I am not trying to trap you; don't we all sort of agree that that was a method that does not now commend itself to any of us?

A. Well, that is possibly true; I think if you carried it far enough and brought in enough samples of pipe you certainly would get a pretty representative picture of what the mains were in the system here.

Q. Well, they had one inch to a mile?

A. Well, that is true.

Q. You think that was not quite enough, don't you?

A. Well, that is true, yes, as far as one inch is concerned.

Q. One other question; our old friend "nominal" and our old friend "actual"—do I state it fairly to you—"nominal" is what the pipe ought to be; "actual" is what it is?

A. That is true, yes.

Q. When you made your estimate down in the excavation

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[fol. 726] how did you know whether the pipe had been what it ought to have been?

A. Well, in the one case it may have been over what it ought to have been, or in another case, it might have been less than what it ought to have been.

Q. Surely; it had to be one way or the other.

A. Of course, it might never have been what it ought to have been.

Q. Well, I think that is sufficient, Mr. Mullin; the problem is there and I think we all recognize it. That is all at this time.

(No reply.)

Redirect examination.

By Mr. Turner:

Q. If it were less than it ought to have been, then the company did not benefit from your figures, did it?

A. That is it; and if it was greater than it ought to have been, the Company did not benefit either.

Q. You speak about Commission engineers using the method that has been used in this case; did you refer to the engineers of the Public Utilities Commission of Ohio?

A. Yes, sir.

Q. Did I understand you this morning that you did not testify in the Federal Case?

A. I testified, yes, on the stand, but not to the extent I am this time.

Q. Was the method used there your method or somebody else's method?

A. No, sir, it was somebody else's method.

Mr. Turner: That is all.

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[fol. 727] Recross-examination.

By Mr. Butler:

Q. Mr. Mullin, do you mean what you say? Now, I guess it does not matter to you, but we have a respect for you and I do not want to get you on the record in a way you do not mean; do you mean to say that the Company could not have profited from your method in either case, even though the pipe had originally been under or over the nominal diameter; you do not mean that, do you?

A. Yes, sir. In case the actual diameter was over the nominal diameter I did not increase my per cent condition on account of that. But in case it was under the nominal diameter I penalized the Company on account of that, so that the company was losing in either case—or in one case.

Q. But, Mr. Mullin, suppose it had been over, that the actual had been over the nominal, and you took the diam-

eter; it might still be equal to the nominal or a little over and still there might have been a loss of material?

A. That is true, yes, sir.

Redirect examination.

By Mr. Turner:

Q. But what is the fact as to whether it was based upon—whether the valuation here is based upon the nominal figures; such as a six inch pipe with a 6.625, we will say, outside diameter; what is the fact?

A. I don't quite get you.

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[fol. 728] Q. Well, I want to know whether or not the valuation in this case was made to reproduce standard pipe of full size?

A. It was, yes, sir.

Q. And if any of it was not full size, you deducted for it, didn't you?

A. That is true, yes, sir.

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[fol. 729] And also—

D. J. Demorest called on behalf of The Columbus Gas & Fuel Company, being first duly sworn, testified as follows:

Examined by Mr. Turner:

Q. State your name, please?

A. D. J. Demorest.

Q. What is your profession?

A. Professor of Metallurgy at Ohio State University, Consulting Chemical and Metallurgical Engineer.

Q. What college or other institutional work did you take preparatory to qualifying yourself to be a metallurgical chemist?

A. I am a graduate in chemical engineering at Ohio State University with post graduate experience in metallurgy.

Q. What practical experience have you had, if any, in addition to your connection with the University?

A. Well, I was fuel chemist for the United States Bureau of Mines, the Ohio Geological Survey, chemist for the Union Pacific Railroad; fuel and gas chemist for the

United States Steel Corporation at Gary; commanding officer in charge of the toxic gas production at Edgewood, Maryland, and consulting metallurgist for a good many years.

Q. Professor, what year did you graduate from Ohio State University?

A. My regular year of graduation was 1905; I took my degree in 1907.

Q. And were you a chemist with Professor Lord in his laboratory?

A. Yes, sir, I was for three or four years.

Q. What are your duties generally as the head of the Department of Metallurgy at Ohio State University?

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[fol. 730] A. I teach various courses in metallurgy, gas and fuel engineering.

Q. Do you do any private laboratory work?

A. Yes, I have maintained a private laboratory ever since the death of N. W. Lord in 1914.

Q. What would you say has been the number of samples that have passed through your laboratory; could you give us an estimate?

A. Since coming back from the army the number of samples that have passed through my laboratory is something like 16,000.

Q. Is there an American Society for Testing Metals?

A. There is.

Q. What is the name of that Society?

A. The American Society for Testing Metals.

Q. Does it have rules for testing materials?

A. It does.

Q. Are you a member of that Society?

A. I am.

Q. Are there other societies which have to do with the testing of materials?

A. Yes, sir, The American Chemical Society, the American Gas Association, The American Electro-Chemical Society, and nearly every technical society has its own committee whose business it is to standardize testing methods.

Q. Of how many of these societies are you a member?

A. I am a member of all the societies that I have mentioned, and others.

Q. Do you know of any societies for testing material in the United States of which you are not a member?

A. Why, yes, there probably are; for instance, the rubber chemists have their own society and own methods; I

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[fol. 731] am not in that line; and there are food chemists.

Q. But I am talking about metallurgy.

A. But in the metallurgical and fuel fields I think I am a member of all the societies that there are.

Q. Are there any principles underlying the sampling of materials?

A. There has probably been given as much attention by these engineering and scientific societies to the problems of sampling as to the problems of analysis of the sample, or nearly as much, and the conditions have been examined at great detail; fundamentals laid down for the sampling of nearly every type of material that enters into engineering and industrial operations.

Q. Would you trace for the Commission the method of sampling and the application thereto, if it has any application, of the law of averages or the theory of probabilities?

A. Well, I expect as good an illustration would be the sampling of coal; coal is quite a hydrogenous material. Any carload of coal, for instance, will contain particles of pyrite, shale, bone coal, true coal in large and small pieces. The sampling of a pile of 100 tons of coal, say, would be carried on in exactly the same way as the sampling of a pile of 100,000 tons of coal, in each case taking about the same sized sample. The amount of material in the pile has no connection with the size of sample which must be taken to get an accurate sample. The thing that determines the size of the sample is the degree of non-uniformity in the sample, so that in sampling a pile of coal one proceeds systematically to take a shovel full of coal at systematic intervals; for instance, laying down the shovel, always taking a shovel full

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[fol. 732] of coal from the end of the handle, wherever it may happen to be, in this way getting a sample which is big enough so that, whether or not one accepted or rejected any shovel full, that acceptance or rejection would have so little effect upon the composition of the final sample that it would be commercially or industrially meaningless. For instance, one might get a shovel full of a sample which is pretty

largely bone coal analyzing perhaps 50 percent of ash. Now the sample of coal must be big enough so that whether one did or did not get that shovel full of bone coal in, his sample would make no significant difference in the analysis of the final sample.

Q. Is that the application of the theory of probabilities?

A. That is the application of the theory of averages or probabilities and that general principle rules when sampling; one must take a sample so that its size is big enough so that no serious difference is made in the final result, whether or not any given piece or shovel full that might be taken at the next grab would make no significant difference in the final analysis, and, as I said, that means that the size of sample you take bears no relationship whatever to the amount of material which is in the pile which is being sampled; it is regulated or governed only by the degree of heterogeneity to lack of uniformity of the material which is being sampled.

Q. You mean by that then that if the substance should differ radically, or especially erratically, then you should need a larger amount of sampling?

A. Yes, that is correct; if you are sampling an absolutely uniform material.

Q. A homogeneous——

A. Absolutely, a homogeneous material, any sample big

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[fol. 733] enough to analyze would be enough. For instance, this pile of, say 500 pounds of coal which is used in sampling a coal pile, that is crushed, and it is crushed so finely that we can divide it in two and take half of it, and no matter which half we take, one half is just as good as another; then that half is still further crushed and divided or quartered, and this is kept up until we get a sample in the laboratory that only weighs one gram or 1/28 of an ounce; that is an amount of coal that would fill about half of a teaspoonful, and that is what is finally analyzed, with full confidence that it represents the entire coal pile.

Q. Is it considered fair or ethical by your profession to take additional samples where the expense involved is out of proportion to the results obtained?

A. That is one of the problems which the engineer, or engineering chemist, is always up against. Sampling is expensive and it is necessary for him to reduce the extent of

sampling just as far as possible and still get an adequate sample. To take a greater amount of that is an unnecessary waste of money and time, and unfair to the employer, and it is not good engineering practice.

Q. Do additional samples add anything to information?

A. No, they do not add anything that is industrially meaningful.

Q. Now do railroads test the steel rails which they buy?

A. Do you mean how do they sample them?

Q. How do they sample them, I should say?

A. Well, the rules laid down by the American Society

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[fol. 734] for Testing Materials requires that one rail be taken from each of three ingots from each heat; a heat of open hearth steel will make perhaps 200 rails; that means that three rails are taken out of 200 for testing; that does not prove, of course, that there may not be in the other 197 rails a defective rail, but it does, according to experience, assure that the probabilities are that all the rails from that heat are safe.

Q. Speaking of a heat, is there such a thing as crystallization of metals as is popularly understood; by that, I mean what the layman refers to as crystallization occurring by stress or use; is there such a thing?

A. No, that is a popular misconception.

Q. Just explain crystallization, please?

A. There is no such thing as non-crystalline metal: all metals are crystalline; the very nature of metals and their production assures that they are crystalline. Now the more coarsely crystalline a metal is, the weaker it is, or, putting it perhaps more positively, the finer the grain, the crystal grain was metal, the higher its strength, and therefore a metal, when it fails in service, it is pretty apt to fail wherever it may be coarsely crystal. And that has led to the popular idea, which is erroneous, that metals crystallize in service.

Q. See if we properly understand each other now. We find a coarse crystallization in a metal at a point of breakage; now that crystallization did not occur through any stress or use but it is due to the fact that it was an imperfect crystallization in the fusing of the metal; is that correct?

A. Well, I perhaps would have to modify your question a little.

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[fol. 735] Q. All right.

A. And say that a metal which is more coarsely crystalline in places than it need be as the result of regular manufacturing methods is defective to the extent to which it is unnecessarily coarsely crystalline.

Q. Well, then where you find a metal broken at one of these points of coarse crystallization, and we call it crystallization—that is, the layman calls it crystallization—you say that is a defect in the metal?

A. That is a defect in the meal as it was originally formed and not as a result of anything that happened in use.

Chairman Geiger: Do you mean to say then, in a few words, that the use of stress upon the metal does not change its crystallization?

The Witness: That is exactly correct; that is well put.

By Mr. Turner:

Q. Let me ask another question along a similar line; will you explain the fatigue of metals?

A. When a metal is subjected to repeated stresses, such as the spring of an automobile, for instance, if those repeated stresses are sufficiently intense to stress the metal to a point going up not far from its elastic limit, although that stress would not break the metal—in fact, it is far from the breaking point—if it is repeated a sufficient number of times, especially if the stresses are alternating in direction, the metal may fail in the course of, say, ten million such alternations by what is called fatigue. Now fatigue of a metal is due to the movement of the metal along the cleavage planes of the metal crystals. I suppose that everybody has noticed that if you hold up a piece of fluorspar or ordinary calxspar that you can see

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[fol. 736] through it very definitely planes that look like they might have been sheets, of something inserted in the crystal. Well, those planes, are planes parallel to the directions of orientation of the layers or atoms of the crystal and it is along those directions or planes that the crystal

de-forms. One plane rubs over the edge of another, just like the leaves of a book can be moved. Now metal when it is stressed, as I have just described, a great many times, not up to its yield point but by many alternations will gradually move along these slip planes and ultimately fail on that account. That is what fatigue of metals is, and that is what causes failure by fatigue.

Q. Can fatigue take place without vibration?

A. No, it cannot.

Chairman Geiger: Just a minute; is fatigue quite the correct term, in other words, if a metal is fatigued to a point where it will not function as it ordinarily would and you give it a rest, does it recover?

The Witness: It does a little but not very much.

Chairman Geiger: Well, ordinarily when we speak of fatigue as far as an animal is concerned, it is inclined to recover by a period of rest, but it won't do it with metals?

The Witness: There is a certain recovery but it is not clear back to the original; it is like working a horse where you have "busted" his wind; it won't recover.

By Mr. Turner:

Q. Now take the distribution system of The Columbus Gas & Fuel Company, what would you say as to whether or not the sending of gas through that distribution system at high or low pressure, or at any pressure, would cause fatigue to pipe at any place other than possibly on a bridge

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[fol. 737] or right under tracks of a railroad?

A. No, it would not.

Q. Are you familiar with the soils of the City of Columbus in which the pipes of The Columbus Gas & Fuel Company are laid?

A. Yes, sir, I am quite familiar with it.

Q. What is the basis of your knowledge of the soils in the city of Columbus? I am speaking now in all my questions with reference to the distribution system of The Columbus Gas & Fuel Company, and I might also embrace at this time the distribution system of The Federal Gas & Fuel Company.

A. Well, I have analyzed——

Mr. Butler: May I ask—pardon me, Professor, does that mean a departure and that you intend to bring the Federal in?

Mr. Turner: No, it means that I am going to comply with the wishes of the Commission and see that they have all information necessary to decide this case. I am going to ask questions without bringing them in—I have nothing to do with bringing the Federal in—about the conditions surrounding the Federal, but thought if I could do it with one witness and one question—if there is any objection I will withdraw it. I am not appearing for the Federal but I am asking for information about the Federal as the attorney for The Columbus Gas & Fuel Company only, seeking to get all the information here that the Commission has intimated, according to my deduction, that they wanted.

Mr. Butler: I do not see how you can, in that piecemeal way, bring it in.

Mr. Turner: All right.

Mr. Butler: Either bring the whole company in as you

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[fol. 738] bring——

Mr. Turner: All right, I will give you cause to raise that question by tomorrow morning. I will put it right up against you tomorrow morning and offer a witness that we will put on the stand.

Mr. Butler: You are threatening me.

Mr. Turner: Yes, I am threatening now. I thought we could shorten things here and if that doesn't go in this won't make any difference.

Mr. Butler: Just reserve my objection to this then and we will see tomorrow morning.

(Question read).

A. I have been in the open trenches of both systems and inspected the soils in a large number of places. I would say the number of those places would be probably—oh, 150. I have analyzed the soils, as I remember it, around 60 places, made chemical analysis of it, so that I feel I am quite familiar with the nature of the soils that surround the distribution system of The Columbus Gas & Fuel Company and of the Federal Gas & Fuel Company.

Q. Have you made sufficient samples for that purpose?

A. Yes, sir, quite sufficient.

Q. What is the result of your examination or analysis of the samples of the Columbus soils in the respects I have spoken on?

A. I have found them to be uniformly—perhaps that word is not well chosen—to be characteristically alkaline soils, the alkalinity being due to the presence of bicarbonate of lime; the bicarbonate of lime coming of course from the solution of limestone pebbles or gravel that is mixed

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[fol. 739] in the clay or soils in the vicinity of Columbus.

Q. Does limestone characterize the soils of the City of Columbus?

A. Yes, sir, it does. The limestone pebbles in the soil do not necessarily come from the underlying rock of the City. The clay is really glacial debris and the limestone pebbles or gravel that occur in the clay may have been brought down from further north.

Q. Well, what would you say as to the soil conditions in the territory in which the pipes of the distribution system of these two companies are laid; is it favorable to the long life of the pipe?

A. I would say that the protective alkalinity of the soils of Columbus, along with the fine clay in which the protective alkalinity is found, is decidedly conducive to long life; that is due not only to the fact that the soils are alkaline as a result of this calcium bicarbonate, but it is also due to the fact that the clay—fine grain clay that is mixed with the calcium bicarbonate is cemented together, or is cemented, by the products of corrosion of the pipe itself; that is to say, when iron atoms leave a pipe in the soil by corrosion, these iron atoms immediately find themselves in an environment which is alkaline and precipitate as hydroxide of iron. Hydroxide of iron is an excellent cement; it is the cement which is, for instance, characteristic of the smooth-on cement so widely sold. Now this ferric hydroxide or iron hydroxide precipitating immediately after it leaves the pipe cements the fine clay together and makes a coating material covering the pipe, this coating being a protective coat, because anything is protective to the pipe which prevents iron from getting away and which prevents

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[fol. 740] the elements of corrosion from having free access to the pipe, the elements of corrosion being oxygen and

water. Soil corrosion of pipe cannot take place without the simultaneous action of oxygen and water.

Q. Now do I understand you to have said, in the layman's language, that even the presence of acid may be helpful in protecting the pipe through the precipitation of this ferric hydroxide; is that technically correct or nearly so, or do I suggest something?

A. That is technically correct, with certain limitations. Iron hydroxide precipitates out immediately as soon as it comes into an alkaline environment, and in the presence of oxygen precipitates out as ferric hydroxide; it precipitates out, but not so rapidly, from a solution which is slightly acid. For instance, in the laboratory we very commonly separate iron from other things, such as manganese or calcium or magnesium, by adjusting the acid of the solution so that the solution is slightly acid to litmus paper, or as indicated by litmus paper, being acid enough to prevent the precipitation of manganese or lime or magnesium, but not acid enough to prevent the precipitation of iron as ferric hydroxide.

Q. What would you say was the Ph. factor that would be necessarily found in the soil to indicate acid sufficient to prevent the precipitation of ferric hydroxide?

A. That is a detailed question, the exact answer to which I could not give; just how acid soil must be before ferric hydroxide won't precipitate is something that would require a good deal of investigation. The difference, of course, in the action of an acid soil as compared with an alkaline soil is that in an acid soil the iron atoms which dissolve away from the pipe are carried away to any extent because they cannot precipitate, they remain in solu-

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[fol. 741] tion, and so the pipe just disappears in the soil. In an alkaline soil, however, the iron which does go into solution leaving the pipe as a result of corrosion precipitates immediately around the pipe; it cannot remain in solution in an alkaline environment. Iron must precipitate by the laws of chemistry just as soon as it comes in contact with the oxygen and a neutral or alkaline or a very slightly acid solution.

Q. Would you say from examination of the soils of Columbus that there is present in the soils of Columbus sufficient acid to prevent the precipitation of ferric hydroxide?

A. I have not found any such condition.

Q. Are the conclusions which you have stated, particularly with reference to the matter of the formation of a protective covering over pipes in the ground, consistent with the generally accepted conclusions of chemists and others familiar with the subject?

A. Yes, sir, they are consistent with the accepted facts and thought of chemists.

Q. Does the Bureau of Standards Department of Research issue a bulletin or journal?

A. The United States Bureau of Standards issues a monthly journal which they call the Journal of Research of the United States Bureau of Standards.

Q. Is that recognized generally in your profession as an authority?

A. Oh, yes, the United States Bureau of Standards has as authoritative a research organization as any organization in the world.

Q. Will you refer to the November issue of the Bureau bulletin and tell the Commission what the Bureau of Research has to say on the question of protective covering

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[fol. 742] over pipes in the ground?

A. I think, Mr. Turner, that you must refer to the August number of 1929.

Q. Well, I have a memorandum of the November number; is it August? All right, give us August.

A. August, 1929; page 275, contains an article entitled "Soil Corrosion Studies, by K. H. Logan, who is one of the Bureau of Standards research chemists.

Q. Can you epitomize that for us?

A. On page 297, the last two sentences of the top paragraph, I find this:

"In each soil, comparison of the depth of pits on pipes of different ages showed that the rate at which pits penetrate the pipes decreases with time. This is in accord with the experimental data and indicates that a straight line depreciation curve should not be used for the determination of the life of an underground pipe system."

That fits in with what I have been saying, that when a pipe starts to corrode the iron leaving the pipe as a result of corrosion in an alkaline soil builds up a protective scale or scab. I have some illustrations here in this bottle that I took off of the pipes.

Q. I want to know what effect, if any, age alone has in the matter of the deterioration of metals?

A. Well, age, of course, alone, is not a corroding agent. The corroding agents are the chemical reagents which act upon the pipe along with the item of electricity; that is the moisture and the oxygen and the chemicals, such as alkalines or acids or salts that are in contact with the pipe, are the corroding agents or the inhibitors of corrosion. Now, if these agents of deterioration are acting, they continue to act

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[fol. 743] as time goes on or as age progresses, and therefore there is a function of age involved, but this function of age is not a straight line factor. For instance, here is another quotation from the same Bureau of Standards article, on page 291, the last sentence of the last paragraph, under Item 3—there is a numbered item here, 3, in which this statement is made:

"It will be evident that in determining the future life of a pipe line from the depth of corrosion at the time of inspection it will be incorrect to assume, as is now frequently done, that the depreciation is proportional to the age of the line."

Q. Is this a correct statement, that except as the corrosive agents work through time, time has nothing to do with depreciation of a metal?

A. That is correct. There is one further quotation from this article I wanted to call attention to, on the bottom of page 281:

"If we average the results in all soils we find that for each material there was a continuous decrease in the rate of corrosion."

That inevitable follows from the fact that the pipe is self-protecting in that it builds up a scab or scale, and I have noticed that that scab or scale gets thickest where the corrosion has started out fastest. Now after while that scale fills in the corrosion pits and builds up a scab so thick that the access of the agents of corrosion to the pipe is almost completely shut off.

And elsewhere in this same article it is pointed out that as corrosion goes on in a pipe the pit gets less and less in rate and the general corrosion then is relatively faster than

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[fol. 744] the pitting; I mean the pitting gets so slow that it ceases to become very much of a factor.

Q. A witness here the other day, in speaking of the retardation of the progress of pitting, used the term "It gets worse slower", is that rather a correct picture?

A. Yes, sir, that is right, it does get worse slower.

Chairman Geiger: I believe I recall the phrase by Shakespeare in which he says "The corroding tooth of time"; I may be mistaken in that; now he was not correct; time has no corroding tooth unless there is something else besides time as an element of corrosion?

The Witness: There must be something to sharpen that tooth.

Mr. Turner: Shakespeare also says that "Age cannot wither or custom stale her infinite variety."

Chairman Geiger: That is another mistake of Shakespeare.

Now I want to ask one question that may be pertinent right there; you speak of this protecting covering over the pipe that is in the ground; that comes from the chemical action of the iron and the clay or dirt that may surround it; now is that enough protection to resist an inside pressure on that pipe, or does it simply protect it against further corrosion?

The Witness: That is all, just from further corrosion; I do not not think it would have any tensile strength that would give it any—I have here some typical scales or scabs which illustrate how the iron that passes into the soil cements the clay together, some that I took off of some of the

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[fol. 745] pipes here in Columbus.

By Mr. Turner:

Q. Suppose you use the illustration of a blotter right at that point; suppose you illustrate the effect of these scale and compare it with a blotter; have you ever used that comparison? I have heard it used.

A. I think that some six or eight or ten years ago that illustration was used. This has exactly the opposite effect of a blotter. The moisture coming to a pipe must come from the soil to the pipe; in other words, the soil must be wetter than the pipe. Now if there is anything between the pipe and the soil that is more impervious to the water

than the soil itself is, then it is obvious that the pipe won't get as much wetness to it as if that scale were not between the pipe and the soil. In many cases this scale is on so tight that it about wore me out trying to rub it off with a file in order to see what the pipe looked like.

Q. Now are you one of the editors of "Chemical Abstracts"?

A. Yes, sir, I am.

Q. What is the function of Chemical Abstracts, just briefly?

A. Chemical Abstracts, abstracts or briefs all scientific literature of the world that has the slightest bearing upon chemistry. There are some 525 journals published in all the scientific languages of the world, Chinese, Japanese, Russian and everything; all these scientific journals are abstracted by the Chemical Abstracts staff, and I am editor of the *the* metallurgical section.

Q. In that capacity have you made observations as to the extent to which soil analyses have been made in the different cities?

A. Well, soil analysis has not been made very extensively.

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[fol. 746] I do not recall any city in which real extensive soil analyses have been made until just very recently. This Abstract Journal here has brought together in this article the soil analyses which have been made by one organization; they, unfortunately, left out the most important part of the analysis.

Q. What would you say as to the analyses that you have made of the Columbus soils in comparison with its extent?

A. I would say that the soil analysis has been sufficiently extensive to accurately show the nature of the typical soil of Columbus and to show the general variation of the soil.

Q. Now if I should go off on a tangent here and get out of your line, just stop me; but I understand that a metallurgical chemist is also more or less or a geologist, so if I get into questions of geology that you do not care to answer, just tell me so.

Mr. Butler: We will not stop you because we do not know anything about it.

Q. To get to my particualr point here I will ask leading questions. This region of Columbus is drained by parallel

south-flowing streams known as the Scioto Drainage System, isn't it?

A. Yes, sir, that is right.

Q. Two of these streams, the Scioto and Olentangy, unite here at Columbus on the middle west part of the city?

A. That is right.

Q. And Alum Creek runs through the eastern part of the city and connects with the Scioto River below the city?

A. That is correct.

Q. Is this locality known as the eastern edge of the Central Low Plains or is it a part of the Appalachian Plateau?

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[fol. 747] A. Columbus is right on the edge; on the border, between the Plains and the Plateau. You can see from East Columbus over on the road that goes down to St. Marys of the Springs, on a clear day you can look east and see the hills that are the beginning of the foothills of the Appalachian System.

Q. Is what is known as the Wisconsin till in this region?

A. I am not sure of that Wisconsin term in that connection.

Q. I have this statement, "The Wisconsin till of the region comes to the surface, being in general, leached to a depth of two to three feet and oxidized to a depth of eight to ten feet"; have you made any investigation of that?

A. No.

Q. I wanted to get something else here; let me ask you about this statement: "The thickness of the drift varies greatly and abruptly from place to place showing an uneven bed rock surface upon which the drifts"—that is this Wisconsin till—"was deposited. The details concerning this bed rock surface are not known, but sufficient data are available to show that very considerable valleys existed which are now buried."

This is what I want to ask you about: "Such an area exists under the down-town section of Columbus. It is 110 feet to bed rock at the American Insurance Union building at Front and Broad streets, or over 50 feet below the Scioto River."

Do you know that?

A. I know that to be a fact.

Q. "It is 125 feet to bed rock in the northeast part of the Statehouse grounds"?

A. I do not known about that.

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[fol. 748] Q. You don't know about that. "And depths or 100 to 200 feet to bed rock are general in down-town Columbus"?

A. I know it is quite deep but I do not know the exact number of feet.

Chairman Geiger: Well, assuming that that is so, what is superimposed upon the bed rock, the disintegrated limestone and gravel?

The Witness: The disintegrate are on top of the rock and on top of that is the till that is deposited by the glacier and——

Chairman Geiger: Well, is that what we ordinarily know as clay?

The witness: Yes, sir, clay and sand and gravel.

By Mr. Turner:

Q. Is this a correct statement then: "A considerable part of the filling of this old valley is gravel which affords a great reservoir for ground water, and this source is being extensively drawn upon for water for industrial uses"?

A. I know that to be a fact.

Q. Would such water as that in any wise affect these pipes, that is, by reason of its location much below the pipes?

A. No, not unless the water got to the pipes, it would not have any effect; that flow of water that you refer to cuts across the southwestern part of the city, way on the edge of the city.

Q. And at a depth——

A. I do not remember the depth, but I know it cuts across the property of the American Rolling Mills Company down there and that is a very large flow of water underground, so large that it is entirely adequate for the industrial operations down there.

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[fol. 749] Chairman Geiger: How deep do they have to drill a well to strike that water?

The Witness: Well, at the American Rolling Mill plant about 110 feet, as I remember it.

Chairman Geiger: And that gets it into a reservoir of water that is stored in the gravel?

The Witness: Yes, sir; it seems to be inexhaustible as far as our pumping is concerned.

Chairman Geiger: Now may I ask one more question; assuming that a pipe is laid in a street which has a street covering of either brick or asphalt, would or would not that street covering protect the underlying pipe from moisture? Do you know whether the moisture would seep in from the sides so as to strike the pipe or not?

The Witness: It would certainly protect the underlying pipe from moisture unless the sewers, which are also under the street, were leaking moisture out underneath, in which case it might act the other way, preventing evaporation.

Chairman Geiger: Assuming that a pipe is laid in clay, how much protection is clay from the seepage of water? Is it more than that of gravel?

The Witness: Oh, yes, much more.

Chairman Geiger: Can water seep through a bank of clay that is in its original position so as to reach a trench in which the pipe is laid?

The Witness: Perhaps I do not understand that question?

(Question read.)

The Witness: Well, clay is about the most impervious

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[fol. 750] of all the natural materials you can have around a pipe, and of course the more impervious a material is the less water will reach it.

Chairman Geiger: Do you know from your observation what proportion of the pipe laid in Columbus is laid through clay as compared with that which is laid in gravel?

The Witness: As I remember it now, just offhand, I haven't found any pipe that is laid in gravel; I have found a number of pipes that were laid in a very gravelly clay, in which, however, clay was more predominant than gravel.

Chairman Geiger: All right; now one more question——

The Witness: There is one exception to that.

Chairman Geiger: Have you made any comparison between the length of life that is properly attributed to pipe, some of which is wrought and some of which is cast iron and some of which is steel; which is the more durable?

The Witness: Well, cast iron is undoubtedly the most durable of them.

Chairman Geiger: Now are large six inch pipes and from that up usually cast iron or wrought iron?

The Witness: Well, the older large pipes are cast iron; the newer large pipes are more apt to be steel.

Chairman Geiger: All right.

By Mr. Turner:

Q. I wanted to ask one question about cinders—I am not sure that I asked you about cinders, and still I may have—that precipitates a bicarbonate of lime; is that what is known as gypsum?

A. No. Gypsum is calcium sulphate.

Q. May gypsum be precipitated by the action of the ele-

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[fol. 751] ments around these pipes at any place?

A. The cinders are apt to have some sulphur in them which ultimately gets oxidized to a hexavalent condition and hexavalent sulphur then reacts promptly with any lime present, whether becarbonate of lime or limestone lime, and forms calcium sulphate, which then may or may not crystallize out as gypsum, gypsum being $CASO4_2H_2O$. I want to add that gypsum is a perfectly neutral salt; neither acid nor alkaline; it is just as neutral as anything can be conceived to be except pure distilled water.

Chairman Geiger: What has gypsum to — with this pipe line in Columbus? Is there any of it surrounding it?

The Witness: It does not have anything to do with it as far as I can see.

Chairman Geiger: Well——

Mr. Turner: But there have been statements about cinders and I have asked him about that, and that is the way we got into gypsum.

The Witness: I think that is the way it was brought in.

Chairman Geiger: But if they have no gypsum in this territory don't take up any time about gypsum.

Mr. Turner: Well, but, Your Honor——

Chairman Geiger: Never mind; I will withdraw my objection; Go right ahead with the examination.

Mr. Turner: I am only talking about cinders now and cinders and gypsum are found in the same locality sometimes.

Chairman Geiger: Well, cinders are hauled in, aren't they, by trucks, and deposited there; where would the
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[fol. 752] gypsum come from with the cinders?

By Mr. Turner:

Q. Explain that.

A. Gypsum might come from the leaching of the sulphur around the cinders and oxidizing the sulphur and forming calcium sulphate.

Chairman Geiger: From all your soil examinations you made in the City of Columbus have you discovered any gypsum in them?

The Witness: No; I have discovered calcium sulphate.

By Mr. Turner:

Q. Now I want to direct your attention to the condition of the pipe themselves; have you made an examination of the pipe in the system of the Columbus Gas & Fuel Company for depreciation and for present condition?

A. For present condition?

Q. Yes.

A. I have this fall examined the pipe in 36 different places in the City of Columbus, taken records of the places at which I examined it, the size of the pipe and the nature of the soil and the amount of corrosion.

Q. Now have you made any previous examinations of the pipe of The Columbus Gas & Fuel Company?

A. Yes, sir, I made an examination five years ago.

Q. Just outline that examination; how many samples were taken?

A. I think there were 65 samples taken; those pipes were examined carefully to find the deepest pits that were present; the depth of the deepest pit in each pipe was measured and from that it was calculated what percentage of the thickness of the pipe was corroded through in the place where it was most deeply corroded. For instance, if a pipe were a quarter of an inch thick, that is, .25 inch, and I found a pit, if the depths of the pits were .05 inch deep, then the
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[fol. 753] average of deterioration of that pipe was taken as 20; that is .05 divided by .25, multiplied by 100.

Chairman Geiger: Let me ask right there, you made a 20 percent depreciation of that pipe where you found the pit, is that correct?

The Witness: That is correct.

Chairman Geiger: For what length pipe did you make that run; you made an examination as I understand it, about one examination for every ten miles of pipe in the City of Columbus, making 36, and there are 390 miles?

The Witness: I made 65 examinations.

Chairman Geiger: Well, then about every six miles; now then if you found a pitted pipe you made a depreciation of 20 per cent, but for what length of pipe; just for a few feet around the pit or for the six miles to the next point of examination?

The Witness: If there were 60 pipe representing 300 miles and one of those pipes was found to be depreciated 20 per cent, that would mean that that pipe represented a 20 percent depreciation on five miles of pipe, although the pipe itself was so long (indicating).

By Mr. Turner:

Q. It has been suggested here that at an inspection point where patches of pits have been found, or the pipe found in bad condition, that the pipe should have been uncovered for a greater distance; in other words, they should have kept on uncovering it until they found where the pits stopped; now what distortion, if any would that have given to the reflecting of the general condition of the system?

A. Well, if that one sample were taken as representing

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[fol. 754] a larger proportion of the total pipe than any other one sample, that, of course, would have been a mathematical distortion of its value. If you dig up a pipe, a piece a yard long, and find it to be badly pitted and out of curiosity you dig up a whole length of pipe, of, say, 30 feet, and evaluate that sample, then that whole 30 feet of pipe should not represent any more of the system than would any other sample dug up anywhere else.

Q. That is what I wanted to get at; in this system of sampling pursued by you in the examination of the Company's pipe, do you take into consideration the length of the samples?

A. No, I do not.

Q. Isn't it a question of the number of samples at representative points throughout the city?

A. That is correct.

Q. And if you did not follow such a plan, wouldn't you have distortion?

A. I would have distorted it. I would have violated all the rules of sampling and would have been wrong.

Q. Now, I believe that in the 1925 examination in your laboratory tests you collected these 65 or 67 samples and then took alternate ones and made an investigation of the alternating ones, every other one, did you not?

A. Yes, sir.

Q. Now tell the Commission what you found there and what bearing, if any, it has upon the theory of sampling?

A. In any job of sampling the sampler must take some means of assuring himself that his sampling has been adequate. He must have some criterion. Now a usual criterion of adequate sampling is this; if one takes a given number of samples, say 100, and evaluates each one separately, then

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[fol. 755] if he puts them down hit or miss or tabulates them hit or miss on a sheet of paper and takes every other one, then he has two groups of 50; then if he evaluates each one of the two groups of 50 and finds that each group gives practically the same answer as the other group, it means that he has done an adequate job of sampling. If he would shake it up and put it down other ways, so that by purely hit or miss methods he divides these 100 samples into two parts and finds that each group of 50, when averaged, gives practically the same result as the other group of 50, then he has done a sufficient job of sampling.

Q. Did you do such a job of sampling with the 65 or 67 samples of The Columbus Gas & Fuel Company's pipe examined by you in 1925?

A. Yes, sir, I did.

Q. Tell the Commission the results.

A. Well, the result was just as I have stated, that taking these 65 samples and putting them down hit or miss and tabulating them, I then took every alternate one, so that I had 32 or 33 in one group and 33 or 32 in the other group, and got the averages on each group, the average on each group being very closely the same as the other. I did that in a number of different ways so that there would be no

personal element entering into it; that means that if I had taken another 30, that there would have been small likelihood that the results of the next 30, or the next group, would have given any different results from the results obtained on the group as reported.

Q. Now have you since taken another group of samples, making a comparison with the results obtained by your first two groups?

A. Yes, sir. This fall I inspected the pipe in 36 different

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[fol. 756] places and the results on those 36 were laid down and compared in the same way with the result that it did not make much difference whether I took either 18, selecting them entirely at random—the results were very little different from each other; they differed from each other in the neighborhood of one percent.

Chairman Geiger: Just one question there, because it may require you to look up something. In 1925 you made approximately 60 examinations?

The Witness: Yes, sir.

Chairman Geiger: And in 1930 you made 36 examinations?

The Witness: Yes, sir.

Chairman Geiger: Now were any of the 36 of the same pipe that you examined in 1925?

The Witness: No, they were entirely different locations.

Chairman Geiger: Well, now, wouldn't it have been perfectly practical, and isn't it practical for you to go back to the points where you made an examination in 1925 and make the same examination of the same locations in 1930, and be able to determine how much deterioration there has been between 1929 and 1930 in the identical pipe you examined in 1925?

The Witness: I presume that could be done.

Chairman Geiger: Well, wouldn't that be the practical way, instead of theorizing about how long it will take to deteriorate; go back to the same point you were in 1925 and see how much deterioration there has been in five years?

The Witness: I am not just sure that the same spot could be hit.

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[fol. 757] Chairman Geiger: Why, you have a record of it, haven't you?

The Witness: Well, not——

Chairman Geiger: Well, assuming you could hit the same spot, wouldn't a five year period between your examination in 1925 and 1930 give you a basis for judgment practically on how much deterioration would have followed from 1925 for a five year period?

The Witness: Yes, I think that is a good thought.

Chairman Geiger: Wouldn't that give you a good basis of judgment as to the progress of deterioration?

The Witness: I think that would probably be a good thing to do. What I wanted to do is to take these different samples in new places though so we would have——

Chairman Geiger: Well, I was thinking about seeing how far the depreciation had progressed in five years.

Mr. Turner: I expect to ask one more question and would like to do it right now.

By Mr. Turner:

Q. Isn't it a fact that your checking of the 36 samples this year did prove to you the correctness of your figures on depreciation from the methods—the approved methods of sampling and testing?

A. Yes, sir, my results obtained this fall were within less than one percent of what they were five years ago.

Q. That would tend to show the correctness of your previous deductions?

A. That is correct.

And thereupon a recess was taken until 1:30 P. M. of same day, Tuesday, December 16th, 1930.

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[fol. 758] Afternoon Session, Tuesday, December 16th, 1930

And also—

D. J. Demorest, resuming the stand for further examination in chief, having been heretofore duly sworn, testified as follows:

Direct examination.

By Mr. Turner:

Q. In your 1925 examination, or the examination of previous condition, you cut out or had cut out sections of the pipe, did you not?

A. Yes, sir.

Q. Did you go to any of the trenches at that time?

A. Yes, sir, I did.

Q. In this last examination how was that made, in the trench?

A. It was made in the trench; I went to the trenches personally and made examinations of pipe in the trenches.

Q. Let me direct your attention to the gas holder; in the first place, have you examined that gas holder, the exterior—for its exterior condition at least?

A. I have, yes, sir.

Q. Just tell the Commission what you found that exterior condition to be in.

A. The gas holder of course is painted—I am talking now about both the holder part and the lifts—is painted. The paint is in good condition except on the top of the life or dome where the paint is raised into blisters in a good many places; I scraped off those blisters and found the steel

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[fol. 759] under the blisters in excellent condition, bright and free from corrosion.

Q. Now I will ask you for the progress in the art first; what improvements, if any have been made in gas holders?

Chairman Geiger: Is he qualified as an expert on gas holders?

Mr. Turner: Yes.

Chairman Geiger: I do not think he has qualified yet.

Mr. Turner: Well, if you want me to take the time.

By Mr. Turner:

Q. Do you know anything about gas holders?

A. Yes, I keep myself familiar with the progress in all such matters.

Q. Well, I will go at this backward then——

Chairman Geiger: All right; that is enough.

Mr. Turner: All right.

Q. Then going to my question as to the progress in the art, what improvements if any have been made in gas holders?

A. There has been one outstanding development, that is the invention of and the manufacture of a waterless gas holder in which, instead of having the inverted lift ride up and down with the bottom of it sealed in water, this has merely a dome which floats upon the gas pressure and is sealed against the side of the holder by a tar seal which scrapes against the side.

Q. Has that—I am trying to get at the question of obsolescence now in this present holder; has that other holder that you speak about been demonstrated to be better of the principle better than this holder?

A. No, I wouldn't say that it has been.

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[fol. 760] Q. I will ask you to state whether or not this holder is necessary in this distribution system?

A. Yes, sir, I would say that a holder is necessary in any city distribution system.

Q. Do you know of such a thing as a city the size of Columbus that has a gas distributing plant that does not have such a holder?

A. No, I do not know of any such city.

Q. Does the use of a gas holder by The Columbus Gas & Fuel Company reflect a common engineering practice?

A. Yes, sir, it does.

Q. If you were to rebuild, would you build a bigger holder there?

A. Oh, I am inclined to think that I would build a number of small holders in districts rather than one big holder.

Q. Is there any difference in the efficiency of that holder in the use of natural gas over artificial gas or of artificial gas over natural gas?

A. Not a bit; it is just as effective on natural as artificial, or vice versa.

Q. Tell the Commission, if you please, what effect the installation of holders has upon the plans, if you please, for the distribution system; what I am trying to get at is, would you have to have a more expensive distribution system if you did not have the holders?

A. Yes, you do; if you don't have holders you have to have a distribution system which has sufficient capacity at

normal pressure to get gas to the ends of the system without the intervention of a holder; while if you have a holder you can store gas during the period of light use and then have it ready to feed out into the system when the demand is heavy. That is one way in which the gas utility has an

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[fol. 761] advantage over the electric utility, for instance; they do not have to have such a large plant to take up the peak loads.

Q. Would it be unsound engineering not to use that holder?

A. I would say it would be.

Q. From your various examinations of the distribution system of the Columbus Gas & Fuel Company are you able to tell the Commission the present condition of that system? If you are, then do so, and you may use a percentage if you care to.

A. Yes; I have examined the system sufficiently extensively to feel confident that I have a measure of its present condition, and that measure I place between 91 and 92 per cent of new.

Chairman Geiger: Do you know the capacity of that holder?

The Witness: I did know it; if I remember, it is 3,000,000.

Chairman Geiger: Do you know the daily consumption of gas in Columbus?

The Witness: It runs to 30,000,000 to 50,000,000, something like that, depending upon the nature of the weather.

Chairman Geiger: So that the holder, as a retort holding a reserve of gas, would only hold enough for about two hours and a half consumption?

The Witness: Yes, something like that.

Chairman Geiger: So that it has no particular value as a storage in case of an extensive breakdown in your supply line?

The Witness: I suspect that is true, yes, sir the function, of course, of a holder normal times is merely to take

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[fol. 762] the peak loads.

Chairman Geiger: Well, as I understand the peak load, whatever it may be, you would only store enough in there to handle two hours and a half of consumption in the city?

Mr. Turner: Your Honor is assuming that the supply stops altogether; but if the supply is feeding on, when it comes to the peak, then is when, as I understand, that this holder becomes of value, and not the cessation entirely of gas.

Chairman Geiger: Well, let me ask you this then, is that holder of any value if the pressure of the gas at your pumps on your pipes is not interfered with in any way, nor the supply of your gas lessened; aren't the pumps sufficient to keep a proper supply of gas and a proper pressure even at a peak load?

The Witness: Well, of course, I don't know just what the capacity of the pumps of this system is.

Chairman Geiger: Well, we know all about the system; let me ask you one other question; we spoke this morning quite at length about the corrosion of steel and iron, and there were two or three elements in there that might possibly be present in this water which is in the bottom of this holder, and that would be sulphur and moisture; there is certainly moisture there because it is water; isn't there likely to be sulphur in that water?

The Witness: There would be sulphur as sulphur dioxide or sulphurous acid which comes from the smoke of locomotives and factories about there, and that is all.

Chairman Geiger: And would that be an element of condition that would tend to promote corrosion?

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[fol. 763] The Witness: Yes, it would.

Chairman Geiger: And that would corrode the inside of that retort and not the outside, would it not?

The Witness: That is correct.

Chairman Geiger: You of course could not examine the inside; you did not see the inside?

The Witness: That would be shown of course on the lifts, where the lifts come up out of the water.

Chairman Geiger: But you could not see the inside of the retort though?

The Witness: No, but you can see the outside, which is just as much in the water as the inside.

Chairman Geiger: All right.

By Mr. Turner:

Q. The Chairman asked you about pressure in connection with the use of this gas holder; if you did not have

the holder wouldn't you require pipes of larger diameter to get the same efficiency?

A. Yes, sir, that is one of the functions of a holder, to make it possible to supply a community with gas with a smaller pipe system than if you did not have the holder.

Cross-examination:

Q. Professor, how many different kinds of an engineer are you; metallurgical, and what else?

A. Well, I am a member of the American Gas Association, so that puts me along with the rest of the gas engineers.

Q. It don't give you any ability though, does it, in itself?

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[fol. 764] A. I practice in gas engineering a great deal.

Q. Since when?

A. Well, 1911, or about that time; I started in as the gas chemist for the United States Steel Corporation of Gary and I have been actively engaged in that work ever since.

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[fol. 765] Chairman Geiger: Professor, may I ask one question there to visualize this: is there any similarity between this retort which is now there and which was built for the holding of artificial gas and those reservoirs you see in water works systems which were formerly used when the pumps pumped the water into the reservoir which is usually located on a high hill, and which now are of little use except to equalize the pressure when pumps are devised and designed to keep the pressure constant without that pressure from the reservoir; now if it involves a complicated answer, why, don't answer that.

The Witness: There is a similarity between the two cases of course; the reservoir does afford a storage of

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[fol. 766] water in case it is suddenly necessary to have it for a peak load, say, and of course that is common in a good many places; and in addition to that the reservoir makes it possible to operate the pumps efficiently all day long. Any pumping system that is designed to pump at a very high rate part of the time and a low rate the rest of the time is now well designed; there is too much money spent in that system; it better be designed smaller; it certainly would work more efficiently if it were designed

smaller and were used un-formaly all the time; there is always a rate of maximum operation of any equipment; if you operate it faster than that, or less faster, the efficient rate of operation is departed from.

Chairman Geiger: I see, all right. Pardon me, Mr. Butler.

Mr. Butler: That is quite all right, Your Honor.

By Mr. Butler:

Q. You inquired into the operation of this very closely before you testified; you know how it has been used, don't you?

A. Oh, I don't know how it has been used in the past years, no; that is, I suppose I know, but I did not inquire into it.

Q. Well, wouldn't it be rat-er essential to know?

A. No, not that I know of.

Q. All right, would it be better if it were larger or would it be better if it were smaller?

A. A large holder is always better than a small holder, but possibly not as intelligent a use of capital; there is a size of holder beyond which the capital investment is not sufficiently used.

Q. What is that size?

A. Oh, that would have to be determined separately for every case.

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[fol. 767] Q. Well, you know what this system is; you are talking about it.

A. I have not figured what is the size of the holder which would be best for Columbus under present circumstances.

Q. How many holders have you designed for a plant?

A. Well, I have drawn specirications for about six holders but they were for my own use, and in my own operations, during the war.

Q. Well, some of them were for systems as large as this?

A. Well, no.

Q. What were they?

A. Well, the Toxic Gas Plant at Edgewood, Maryland, was using something in the neighborhood of a million feet a day—various kinds of gas.

Q. One plant?

A. One plant, yes, sir.

Q. How big was your holder there?

A. I had a separate holder for the carbon dioxide and a separate holder for ethylene and a separate holder for oxygen. I think there were four holders of 100,000 cubic feet each, and several smaller ones.

Q. Now at what other plants did you design any?

A. I never designed any others.

Q. Do you mean to say that if you were designing today you would use the waterless lift or the water lift?

A. I have not been able to satisfy myself about that yet, which is the best; I would probably spend a week or two working on the problem and nothing else before. I could make up my mind.

Q. Well, the General would no doubt give you the time. Did I understand you, Professor, to say that instead of

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[fol. 768] using a large holder it would be more efficient to have a number of smaller holders?

A. I think probably that would be the better working out of the distribution problem, if there were any distribution problem involved; that is, if there were sections that were having difficulty getting gas that might be a better way to work that out.

Chairman Geiger: Well, let me ask you one other question; there are two gas distributing plants in Columbus, aren't there?

The Witness: Do you mean the Federal and the Columbus?

Chairman Geiger: Yes.

The Witness: Yes, sir.

Chairman Geiger: Now this belongs to the Columbus?

The Witness: Yes, sir.

Chairman Geiger: Has the Federal got a gas retort like that?

The Witness: No, sir.

Chairman Geiger: Do they need it?

The Witness: Well, the mains are interconnected, as I understand it.

Chairman Geiger: Do you mean, may get gas through this retort?

The Witness: Yes, sir, that is what I understand.

Chairman Geiger: And the benefit of this gas retort, whatever it may be goes to the Federal through a connection of some kind.

Chairman Geiger: All right.

By Mr. Butler:

Q. Those little children are pretty near Siamese twins, 584

[fol. 769] aren't they?

A. I have not examined the condition of the umbilical cord.

Q. You have examined about everything else, haven't you, Professor?

(No reply.)

Chairman Geiger: You would not know, if you had to apportion between the usefulness of this gas retort between the Federal and the Columbus, how much of it was used and useful by the Columbus Gas Company and how much of it was used and useful by the Federal Gas Company?

The Witness: I would say it would be a matter of a prorate according to the number of cubic feet of gas distributed.

Chairman Geiger: All right.

[fol. 770] Q. Exactly. We understood that this capacity was a million and three-quarters instead of three million; are we right about that? Mr. Welker may know—a million and three-quarters, isn't it, and that reduces its worth quite a little, doesn't it, to a big system like this?

A. Well, the smaller it is the less you can use it.

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[fol. 771] Q. In proportion to the square—the difference in the smallness—or does it decrease that way?

A. No, I would say this, though, that if it is big enough to do its job a bigger holder is unnecessarily big; if it carried the peak lead at the time people are getting their suppers, for instance, satisfactorily, a bigger holder is not necessary.

Q. But if the drainage continued very long then your bigger holder would be better, I suppose?

A. Of course, that is true of the holder equipment of any gas company; no holder is half big enough to supply gas through an indefinite shut down of the gas-producing equipment.

Q. No, you can hardly provide against that, can you?

A. No.

Q. That is a calamity, when is the peak load on the company's system?

A. I imagine it is here like it is in most all cities; take on the peak load as supper times comes on.

Q. About the time Father gets home?

A. About that time.

Q. And that is when you would expect that to be in maximum use?

A. Yes, sir; and of course that is much more essential in certain periods of the year than it is in other periods; there are probably certain periods of the year when the holder is not needed at all, when the gas consumption of the town is so low there is no difficulty in keeping up pressure without the additional help of the holder over the peak period.

Q. Professor, how far does the influence of that holder extend?

A. Well, theoretically speaking, it extends clear to the last tip of the last pipe; practically speaking, it does not go

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[fol. 772] that far. Now just how far it goes I do not know.

Q. Well, there could be some considerable difference between the tip of the last pipe and a few hundred feet, for example?

A. That is very true, but I have made no measurement of it.

Q. Doesn't that enter into your consideration of this? How on earth can you design a plant and understand its influence without some comprehension of that factor?

A. Well I can comprehend a plant and its operation without comprehending the meaning of the question that is asked me, in a general or hypothetical sort of way, without giving a comprehensive answer.

Q. You think the question is kind of dumb, don't you?

A. Well, I am inclined sometimes to——

Q. Well, don't be hesitant about it. What is the function of a regulator in a system?

A. Pressure; regulate the pressure.

Q. The function of a holder is merely supply?

A. Yes, but it has its pressure regulating function, too; the pressure regulator that you referred to is practically always put into a place where they are reducing from a high to a low pressure main; from high pressure gas to low pressure gas. A holder is always delivering into a comparatively low pressure system.

Q. Professor, when you testified in 1925, you did not——

Chairman Geiger: Just a moment before we pass from that, you have testified, Professor, that the peak load occurs

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[fol. 773] at the time Father comes home; you mean by that that in the evening the peak load occurs?

The Witness: Yes, sir.

Chairman Geiger: Now, assuming that a gas company which is supplying gas for domestic consumption is likewise supplying gas for industrial purposes, which would include the running of a number of gas engines and gas furnaces, and a number of other things that were operating during the day time and were shut down at the time Father comes home; how would you be able to determine that the peak load is when Father comes home and not during the day when industrial gas is being consumed?

The Witness: Well, of course, that depends upon the relative importance of the industrial consumption to the domestic consumption.

Chairman Geiger: Do you know what the relative proportion is in Columbus?

The Witness: No.

Chairman Geiger: Then you would not be able to say that the peak load occurs at six o'clock in the evening.

The Witness: I think I said if it is like it is in most cities it would occur at that time.

Chairman Geiger: That would be domestic consumption?

The Witness: Yes, sir.

Chairman Geiger: You would not apply that to a mixed domestic and industrial consumption?

The Witness: Well, it is a fact that in most cities the peak loads do come along towards evening when supper is being prepared.

Mr. Turner: I would like to suggest to the chairman that

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[fol. 774] there is no evidence here in this case of any industrial load on The Columbus Gas & Fuel Company or the Federal Gas & Fuel Company. If you want that evidence, we will put it in at the proper time, but there is no such evidence now.

Chairman Geiger: Well, I was only asking, assuming that is the fact.

Mr. Turner: Well, of course, the transcript of the question will speak for itself, and I was only objecting to the form as I got it.

Chairman Geiger: It is perfect*ing* proper to explain it and I have no doubt your consumption would show it.

Mr. Turner: Yes; it is practically nil.

By Mr. Butler:

Q. Professor, can you tell the Commission how many regulators there are around this holder and how close they are to it?

A. No, I cannot; I have not examined that.

Q. Didn't you consider that at all.

A. No.

Q. Professor, when you testified in the Federal Court in 1925, you did not qualify as an expert on holders, did you?

A. That was a long time ago, I don- remember just what qualifications were put in.

Q. Not so very long.

A. I suspect if necessary I would have put in a qualification.

Q. Well, you testified about the depreciation of the holder?

A. Yes, sir, that is correct.

Q. But am I wrong in assuming that you disclaimed any knowledge of—any special knowledge of the operation of the holder?

A. No.

Q. Well, then let it go at that. By the way——

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[fol. 775] A. Just let — understand; maybe I did not get your question right—that last question.

(Question read.)

A. Oh, yes, you are wrong; any mechanical engineering graduate knows how a holder operates; it is just as simple as——

Q. Oh, yes, the mechanical operation, but I am going further than that; its relation to the system and its efficiency and value to the system; that is what I want; probably we do not mean the same thing.

You were a witness for the City way back in 1919?

A. That is correct; I do not remember the year but it was away back there some time.

Q. Before the Commission, was it not, before the Utilities Commission, in a rate case?

A. I think it was.

Q. Involving The Columbus Gas & Fuel Company, this Company, and also The Federal Gas & Fuel Company?

A. I would not be able to say whether both companies were involved or not.

Q. Well, it so shows in the record; they were consolidated; No. 879 and 880, before The Public Utilities Commission of Ohio, in the matter of the appeal of each company. Then in 1925 you testified in the Federal Court for the Gas Company—for the two Gas Companies?

A. There again I am not sure that it was both. My impression is that it was only one gas company in 1925.

Q. No, there were two, and they were consolidated, but we just took the testimony for The Columbus Gas & Fuel Company and then took some further testimony for the Federal, but they were really one case. Now, Professor Demorest, you recall that Judge Scarlett examined you and

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[fol. 776] you testified for the City in the first time?

A. Yes, I recall it very distinctly.

Q. Now I shall not annoy you by reading a question and answer and then asking you to explain it, but unless Mr. Turner objects, I shall read a number of questions and answers before I stop. Now that does not mean that I do not freely grant you the permission at any time to interrupt me and make an explanation, or at the end; I have not the slightest desire to close you from any explanation. You had had a very wide experience at that time, hadn't you?

A. Quite considerable, yes, sir.

Q. And you had gone through all of your experience in the war at that time?

A. That is correct.

Q. And you represented at that time a number of companies dealing in steel products?

A. I would not say that I represented them.
Q. Well, you were consulting engineer for them?
A. That is right.
Q. I will read as follows:

"Q. How much of a force have you in your private laboratory?

"A. At present I have three chemists all the time in my private laboratory.

"Q. Just describe the kind of work that is done there under your supervision in your laboratory, with particular relation to those things which affect or tend to affect the life and corrosion of pipes or other metal in the ground in and around Columbus.

"A. The question is rather broad. To my laboratory come every variety of question that one could think of in connection with the use of metals and the manufacture of

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[fol. 727] metals. The manufacturer on one side asks me what he can do at his plant to make his metals more corrosion resisting, and the consumer of metals on the other hand sends his problems to my laboratory asking why the pipe or the metal that he has used has corroded and how he can buy to better advantage. I should say that I would answer the question by saying that every kind of question that can come to a metallurgical chemist's laboratory comes to my laboratory. That includes a very wide range of subjects.

"Q. Have you made tests of the soils of the state in your laboratory, Mr. Demorest?

"A. Yes, I have analyzed practically all the outcrops of high grade clays, and have analyzed the soils from this region for various persons, a good many times during the past ten or twelve years.

"Q. Have you done any work for the Ohio Geological Survey?

"A. I have been the chemist for the Ohio Geological Survey for I guess perhaps ten years and have analyzed all the rocks in Ohio for them.

"Q. Are you familiar with the rock formation and the soils in and around Columbus?

"A. Yes, sir, I think I am quite familiar with the rocks and soils in this locality.

"Q. You might describe the soils and rock formation of Columbus and vicinity with particular relation to their

characteristics which would tend to affect the life of pipe laid in that soil.

"A. The bed rock that underlies Columbus, especially North Columbus, is shale. Underneath the shale is limestone which outcrops over by the Scioto River and the soil of Columbus has resulted from the disintegration of shale in the higher regions. In the lower regions, such as the

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[fol. 778] overflow region of the river of course it is a sandy soil mixed in with the general clay of the region resulting from the disintegration of shale. So that I should say the soils of Columbus and vicinity is composed of shale in all the region except the bottom land where it is an alluvium resulting from the deposition of sand and clay from the river-borne material.

"Q. What would you say as to whether any part of the soil of Columbus might be described as gravelly soil and if so what part and the limit of it?

"A. The only gravelly soil that I know of here is the soil on the west side that has been washed over by the river in its floods and that of course does not extend up on the hill top of the west side.

"Q. Now does it extend to the land on the east side of the Olentangy River above the lowlands of the river here?

"A. No; it does not extend beyond the flood region, which excludes it from all the land that is not strictly river bottom. There is no sandstone then over near Black Hand as far as I know of that would make a locally formed soil from the weathering of rock of a sandy nature.

"Professor Demorest I will ask you to describe the process or processes of corrosion of a metal, or particularly of pipe such as gas pipe—steel or wrought iron gas pipe in a soil such as that of Columbus.

"A. Corrosion is fundamentally the same whether it occurs in Columbus soil or any other soil. To start with pure iron will corrode in pure water. You do not have to have any acid in pure water to make it start to corrode. The corrosion is very slow under such circumstances, the corrosion there being due to the fact that iron has, like most metals, a definite solution tension that drives it into

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[fol. 779] solution. The presence of oxygen then precipitates the dissolved iron out as ferric iron hydroxide, and that is what you call rust. This fundamental corrosion

is hastened by anything which induces galvanic action, that is by impurities in the metal or by mechanical strains in the metal, and is also accelerated tremendously by the presence of any chemical which increases the concentration of ironic hydrogen as the chemist would say, or acid hydrogen, so that any acid material surrounding the pipe stimulates corrosion. Corrosion then is stimulated by the presence of acid and by the free supply of oxygen and by anything that induces galvanic action such as impurity of any kind. I think that covers it.

"Q. What do you mean by galvanic action, Professor?

"A. Any two materials in contact will have, with very few exceptions, different solution tensions, that is their electric potential towards the solution that surrounds them will be different, and that sets up a galvanic coupling. The material which goes into solution with the highest potention becomes the positive pole of the galvanic coupling and the other material which has the—"

The Witness: Pardon me, does that say "coupling"?

Mr. Butler: "Galvanic coupling."

The Witness: That was incorrect, of course.

Mr. Butler: What should it be?

The Witness: Galvanic couple.

Mr. Butler: We will put it that way.

"Galvanic couple and the other material which has the lowest electric or solution tension becomes the negative pole of the couple and current flows from the one that has

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[fol. 780] the highest potention to the one that has the lowest potential so we have the complete circuit. It is exactly the same as the action going on in a dry cell—or I will change that word "dry cell" to the ordinary electrolitic cell, as that might be misleading.

"Q. What effect has the formation of a first coat of rust on say a pipe such as a gas pipe in a clay soil or other soil upon the acceleration or degree of the activity of that corrosion?"

Mr. Butler: I want to read that question again:

"Q. What effect has the formation of a first coat of rust on say a pipe such as a gas pipe in a clay soil or other soil upon the acceleration or degree of the activity of that corrosion?

"A. Well, it is a good deal like wrapping a blotter around a pipe of iron; it acts as a sponge to hold the moisture against the iron and of course affords another opportunity for galvanic action. But largely, as I see it, the formation of a coat of rust or sludge around a piece of metal is the same as keeping a blotter wet; that is the same as keeping a blotter up against metal. As long as metal is kept wet it corrodes.

"Q. And that coat of rust tends to keep the metal wet?

"A. Yes, sir.

"Q. Professor Demorest, do you know of any chemical combination that the clay soils could form with this coat of rust to prevent any further corrosion?

"A. The material of which clay is made is already chemically combined and its affinities are satisfied—chemical affinities. It does not further combine with clay. It mixes with it merely mechanically but does not combine with clay.

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[fol. 781] "Q. Would a coat of clay around a pipe on which a coat of rust had formed then—or would that clay with the addition of the coat of rust in any way interfere with the corrosion—the process of corrosion which you have described?

"A. No. I don't think it would.

"Q. What do you know about the clay soils of Columbus, Professor, as to whether or not they contain sulphur?

"A. I know that they contain sulphur always.

"Q. Why is that, outside of the fact that you know that, can you account for it; what is the reason for it?

"A. Well, the clay soils of Columbus are the result of the disintegration of shale through weathering processes and on the shale of this region and of Ohio in general that I have analyzed—and I analyzed most of them—are sulphur bearing, and of course the clay resulting from the shale is sulphur bearing.

"Q. Now what effect would such a clay soil have upon the life of pipe and have upon the process of corrosion; describe the process.

"A. Well you are asking this question under ordinary soil conditions, I suppose?

"Q. The soil conditions—the clay conditions you have described in Columbus, yes.

"A. As the atmospheric waters percolate down through the clay they carry with them oxygen, because oxygen is soluble in water, and that oxydizes the pyrite, which is iron sulphide and which is the condition that sulphur exists in clay, chiefly; oxydizes this pyrite to sulphate of iron and sulphuric acid, both of which have acid reaction, and this acid produced by the oxidation of the sulphur in clay through weathering processes is the thing which clearly

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[fol. 782] accelerates the corrosion of pipe in this kind of soil.

"Q. What effect then has such a clay soil under the processes you have described upon the life of pipe in that soil?

"A. The life of pipe in such a soil would be much shorter than it would be in a soil which was absolutely neutral in its reaction, of which there are very few.

"Q. Professor, what would be the effect in a case where gas pipe was laid right in the shale rock, of placing under that pipe two or three inches of the surface soil from the lots or streets nearby—referring now to the north end—and covering the pipe over with about a foot in depth of that soil for the width of an ordinary gas pipe trench, sixteen or eighteen inches, I believe Mr. Strickler said; what effect would the addition around the pipe of such surface soil have in protecting the life of that pipe from shale and shale conditions existing there?

"A. The chief effect that appeals to me would be—or the likely effect is that this surface soil would act as a holder of water to keep that pipe wet. If the trench had been filled with broken pieces of shale, the moisture going through the ground would have a better chance to drain away from the pipe than if this soil had not been put around it. I do not think that the addition of surface soil in the trench or around the pipe would protect the pipe at all. I would be more apt to have the opinion that it would lessen the life of the pipe than to protect it.

"Q. What is the nature of surface soil where shale is found, where the depth at which pipe is laid is two or three feet, what is the nature of the surface soil in that neighborhood?

"A. Well, the surface soil is the soil that has been *that*

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[fol. 783] *has been* produced by the weathering of the shale rock, except of course where it is subjected to river floods.

"Q. But I am referring now to the high land; one or the instances given was Nineteenth Avenue between Iuka and Indianola, and Cleveland Avenue north of the railroad tracks.

"A. Well that soil is a mixture of the product of the weathering of the shale rock and glacial debris.

"Q. Does it have any sulphur in its composition?

"A. It does. Even the finest clays of Ohio have sulphur in them. I have never found them free from sulphur.

"Q. What about the effect of cinders upon metal pipe—gas pipe laid in our streets, Professor?

"A. Do you mean cinders in the trench along with the pipe?

"Q. Cinders—the ordinary cinders which are used for instance as a foundation for our sidewalks and are found in various alleys and streets in the city.

"A. Well do I understand that you are asking about the effect of those cinders in a trench right along with the pipe or the pipe in a trench near cinders?

"Q. I will ask you first the effect of cinders in fairly close contact with the pipe.

"A. The cinders, as we ordinarily understand the term "cinder," means the product resulting from the burning of coal, and it always contains sulphur in both the form of iron sulphide and iron sulphate, and is quite destructive to any iron or steel that is in contact with it.

"Q. What would you say as to the effect upon pipe, of its location at a depth of two or three feet beneath a sidewalk which has a cinder foundation of from two inches up

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[fol. 784] to eight inches.

"A. I would say it is a very poor place to put pipe because the surface water moving down through the cinders extracts the acid sulphates from the cinders, and carries it with it down through the soil to the pipe.

"Q. And what is the reaction between that sulphurous or sulphuric acid and the pipe?

"A. The action is to accelerate the corrosion of the pipe.

"Q. What is the most advantageous soil for pipe?

"A. A sandy soil high in limestone; that means an alkaline soil."

Mr. Butler: May I say, Mr. Turner, that I have up to this time read everything consecutively.

Mr. Turner: Will you do the same for me that I do for you, give me a copy so that I might follow it?

Mr. Butler: Oh, well, I don't have any copy Mr. Turner; I just assumed you had one.

"Q. And from your knowledge of the soil of Columbus, Professor Demorest, I will ask you to state your opinion of the life of the ordinary merchant steel or wrought iron pipe—gas pipe in the soil and streets of Columbus, particularly with relation first to those of three inch and under and then to those over three inch."

Mr. Turner: I would like to have you go consecutively if I haven't a copy.

Mr. Butler: Well, all right, Ed, I will do that if you request it.

Mr. Turner: What year was that Mr. Butler?

Mr. Butler: 1919.

"Mr. Taylor (reading:) Just for information, let me

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[fol. 765] ask; you are asking him with reference to the effect of this soil generally on merchant steel or wrought iron pipe as I understand you?

"Mr. Scarlett: On wrought iron, yes, sir.

"Mr. Taylor: You said 'Merchant steel or wrought iron,' they are different kinds of pipe. Do you want it to be understood that they are the same kind of pipe? As a matter of fact they are not.

"Mr. Scarlett: I will modify that question to relate to the standard steel pipe used as gas pipe.

"Mr. Williams: Are you asking him as to a particular dimension?

"Mr. Scarlett: Yes, I am directing his attention to pipe first three inch and under and then to pipe over three inch.

"The Witness: The usual estimates of the life of a three inch pipe, or under of twenty years is, in my opinion, certainly not—is certainly a fair—that is not exactly what I want to say; twenty years for such a pipe is certainly not giving the pipe an underrating as far as its life is concerned because the Columbus soils are decidedly acid soils and the accepted rating by engineers of thirty years for pipe of three inch and over——

"Mr. Taylor: Speaking of steel pipe now?

"The Witness: Speaking of steel pipe now.

"Mr. Scarlett: Standard steel pipe.

"The Witness: Yes, speaking especially of the steel pipe that was made some years ago; it is made better now; thirty years is certainly not giving the pipe an underrating as

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[fol. 786] far as its life is concern-. I would not give much for either one of those pipes that would be in the ground that long.

"Q. Now the life you have given here, does that have any reference to pipe- that are in contact with cinders or direct contact with shale, or is that the normal and average condition?"

A. In giving those periods I am not thinking of pipe in such unfavorable circumstances as laid in fresh shale that still has its sulphur in it, nor in contact with cinders.

"Q. Now as to cast iron pipe of four inches and over used for gas purposes, what would you say as to the fairness of a life of seventy-five years?

"Mr. Williams: Well, I hardly think that is a proper question to ask you- own witness. It is leading and suggestive and this is not cross-examination.

"Mr. Scarlett: I will withdrew that question.

"Q. What would you say was the fair life of a cast iron pipe used for gas purposes in the soil of Columbus?

"A. Well the length of life for such cast iron pipe of anywhere between fifty and one hundred years would be a fair guess; at the best it is a guess.

"Mr. Taylor: All of them are.

"The Witness: Under extremely fair conditions cast iron has been known to last in good shape for two hundred years. Under unfair conditions cast iron has been known to last, for instance in a salty soil, for seven years. But for such soil as Columbus, I should say that seventy-five years would be a reasonable estimate.

"Mr. Scarlett: I think that is all; you may cross-

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[fol. 787] examine."

Mr. Butler: Do you want to read the cross-examination or do you want me to do that?

Mr. Turner: No, I don't want anything to do with it. You keep ahead; you are going nicely.

Chairman Geiger: You don't have to read it unless you want to.

Mr. Butler: You don't want your cross-examination read?

Mr. Turner: My cross-examination?

Mr. Butler: Well, your company's cross-examination.

Mr. Turner: Why, I haven't seen it; I don't care anything about it.

Mr. Butler: I don't want to be accused of missing something that——

The Witness: Mr. Butler, are you going to read the questions on the same subject in the case of 1925?

Mr. Butler: Oh, no, sir, you had been converted by that time.

Mr. Turner: Well, we object to that statement. There is a good deal of that argument in the form of the questions. I don't think this witness deserves anything of the sort and I object to it.

Mr. Butler: Listen, Mr. Turner, this witness knows very well that he went over all this in 1925.

Mr. Turner: Yes, he knows he went over it and he knows about the conversion part of it, and that is the part that I object to. There has been nothing here upon which to base that statement.

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[fol. 788] Mr. Butler: Well, the Commission will judge that.

Mr. Turner: Well, we object to your saying so.

Mr. Butler: Oh, I see.

Mr. Turner: There is a time for argument.

By Mr. Butler:

Q. Professor, I most humbly apologize and withdraw it and say it is not my intention to read your testimony of 1925, because at that time you were testifying for the company and your testimony was very much along the lines——

A. Are you willing to go a step further and say that in 1925—1919, I was answering questions generally, and in 1925 I was answering specific questions on a basis of known facts?

Q. Well, I don't go that far. I have never been able to reconcile, and I do not now reconcile, how it was possible

for you to testify in 1919 as you did and to testify in 1925 as you did, and as you have testified today.

Mr. Turner: Well, we will let the Commission read the questions and see if they were not general at that time and see whether now they are similar. Where is there a saline question? Have you any salt wells in Columbus?

The Witness: I want to say right here that all this—all the principles or theory you have read there were answered by me as I hear it now extremely accurately. I am surprised that I was able to make such a good lecture at the time. It is good. It is good. There is not a thing wrong in the principles or theory in that 1919 discussion, not a thing. It is just as true now as it was then.

Chairman Geiger: Let me ask, in 1919, did you testify as to the then condition of the pipe?"

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[fol. 789] The witness: I saw just one pipe and I have no idea where it came from; I was asked a hypothetical question about it.

Chairman Geiger: Did you give your estimate of its then condition?

The Witness: I am not real sure about that.

Chairman Geiger: Well, the evidence will show that.

Mr. Butler: If the Commission please, and Mr. Turner, I do not see how I can consistently avoid reading the cross-examination because I do not want the thought to take possession of any of you that I am dodging any part of it, and then I have to pick out some of the things out of it. I am sorry that it takes that time, but it seems the only fair way.

I will read the cross-examination.

"Cross-examination.

"By Mr. Williams:

"Q. How much experience have you had, Professor, in the actual inspection of pipes in the ground?

"A. In the course of my work for the Highway Commission I inspected a good many culverts and as the University chemist it is my business to inspect all pipes that are dug up and that are in bad condition on the University grounds.

"Q. That is, you mean you inspect all pipes which may be dug up in the University grounds?

"A. That is correct. The University soil is quite similar to all Columbus soil.

"Q. You have never made any inspection of the pipes of the Columbus Gas & Fuel Company or of the Federal Gas & Fuel Company?

"A. Yes, I have, in this way, that several times people in the city have sent pieces of pipe that they have dug up

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[fol. 790] to ask why it should have gotten in the condition it was.

"Q. Well, do you know where they come from?

"A. I did at the time; I don't remember now, of course.

"Q. Well, speaking now of your own knowledge, you do not recall now of any pipe, either from the Columbus Gas plant of the Federal plant which you could positively say was a pipe of either of those companies?

"A. I would say that the chances are enormously great that I have inspect- such pipe; but I do not remember them specifically.

"Q. Well, of course you say that you have inspected pipe that people dug up; you would not expect anybody to dig up a gas pipe and bring it to you, would you?

"A. Why sure.

"Q. Well that would be a pipe that would belong to the Company wouldn't it?

"A. Pipe that was thrown out on the ground and left there after the trench had been opened and the new pipe put in.

"Q. That is not the way pipes are handled, Professor; they are taken back to the shop and junked.

"Mr. Scarlett: We happen to have some of that pipe, Mr. Williams.

"Mr. Williams: Well I don't know where you got it.

"Mr. Taylor: Oh, we lose a lot of pipe.

"Q. Have you ever in your professional experience, Professor, made any inspection of a gas main plant—the plant of a company to determine its age or its value or anything of that kind?

"A. I have not.

"Q. You have never inspected the gas mains of a company in actual use?

"A. No.

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[fol. 791] "Q. I wish you would look at that *time* that has been marked for identification as Exhibit No. 1 and tell us, if you can, how long it has been in the ground.

"A. I would say that anybody who looked at that piece of pipe and made an effort to tell you how long it has been in the ground, was exceeding the probable powers of anybody.

"Q. Well, can you tell us how long the process of corrosion has been taking place on that pipe?

"A. Absolutely not, and neither can anybody else, because I do not know the circumstances under which this pipe existed in the ground.

"Q. Well assume that that pipe was put in the ordinary Columbus soil, subject to the usual and ordinary conditions in Columbus, and that it was placed there for use as a gas pipe for the transportation of gas, and that it was acted upon by the elements and by the soil, as you say would ordinarily occur with a pipe in Columbus, can you tell us how long that process of corrosion has been taking place on that pipe?

"Mr. Scarlett: Now, just a minute, Professor, before we go into that question; the Commission can see that it is ridiculous on its face because it is asking something which does not exist in evidence. There has been no testimony as to the character of the soil in which that pipe laid or anything else that would help the Commission. He is asking something concerning which there is no proof, and this is a section of about five feet out of five hundred miles of pipe in Columbus. Now what sort of test is that?

"Chairman Marshall: Well first of all the Professor is amply able to take care of himself, and secondly it is only asking if he can, so your objection is overruled. Go ahead.

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[fol. 792] "The Witness: I would have to remove all the dirt that is on this pipe before I would know anything about the condition of the iron of course. You can take a piece of pipe that is just about ready to fall to pieces and nicely coat it over with clay and rust and make it look pretty good. This pipe, though, does look to be in pretty

good condition, and I would guess, if this were an average piece of pipe in average Columbus soil and if it had lain there under average conditions of moisture and so forth, that this pipe had probably been in the ground for—over perhaps four years. But that is a wild guess. It means nothing, because I cannot see the pipe.

"Q. Well, scrape it off a little bit if you want to look at it.

"Mr. Godown: Maybe he hasn't anything to scrape it with.

"The Witness: Of course I don't know whether this pipe was in the ground along with lime or limestone or happened to be in the ground in a sandy soil.

"Q. Well I am asking you now, assuming that that has been in the ordinary average soil of Columbus?

"A. I see it has some pitted spots that have gone in; there is one spot that has gone in perhaps a sixteenth of an inch; it would not be many years before that is leaking. The pipe is pretty nearly through in places.

"Q. Well you say that you think it has been in the ground about four years?

"A. No, I don't say that.

"Q. Well what do you say now?

"A. I say that if that pipe is an average pipe—which I

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[fol. 793] don't know—and if it were in the ground in average soil, under average trench conditions, that to look at it with the very poor facilities for observation that I have here, I would make a guess that it had been in the ground four or five years.

"Q. That is four or five years, and estimating as you do the life of an average steel pipe of twenty years, that you think that pipe has had about one-fourth or one-fifth of its life used up?

"A. I want to emphasize again that anything I say about this pipe is just a guess on account of the fact that the facilities for observation are extremely poor, of course. But I would say, yes, that I would guess it to be about five years.

"Q. That is your estimate would be then that that pipe has had about one-fourth of its probable life?

"A. Ask that question again.

"Q. You estimated as I understood you awhile ago the average life of steel pipe of that dimension in the Columbus soil as being twenty years. Now you say that in your opinion that pipe has been in the ground about five years. In other words from its appearance you would conclude that it had had about one-fourth of its life?

"A. Yes, that would be the logical conclusion from what I have said. I want to emphasize again though that any remarks made upon a single piece of pipe like that are almost meaningless, under those conditions.

"Q. Well now isn't it true, Professor, that when you have pipes brought to your laboratory for inspection and examination, that it is usually a small piece of pipe something like that Exhibit?

"A. With all the conditions concerning the history of that pipe given me as fully as possible.

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[fol. 794] "Q. But you make your estimate of the probable life of a pipe in the ground from samples of that kind that you have examined do you not, and from that only?

"A. Not from one sample.

"Q. I know, but I mean from a number of samples of that particular character?

"A. Yes, sir, after having thoroughly cleaned it and put it under a microscope and done a lot of things that I cannot do here. I would never give an estimate on that condition of a pipe without cutting sections out of it and examining it with a microscope.

"Q. Well, is not your conclusion as to the effect of soil upon pipe made up entirely from samples of pipes that have been brought to you—to your laboratory for inspection and examination?

"A. Not all of them, of course have been brought to me for my inspection. I, have of course, like any chemist, kept my eyes open and have listened and read about the experiences — others in this vicinity and other vicinities. I would not say that my opinion was made up solely on the basis of pipe which I have seen, brought to my laboratory.

"Q. You have never had under your inspection a pipe to notice its process of disintegration or a series of pipes for twenty years have you?

"A. That have been in the ground twenty years do you mean?

"Q. Yes.

"A. Yes, sir.

"Q. How many samples have you had submitted to you of steel pipe from this soil that had been in the ground twenty years?

"A. Oh, I should say five or six would cover it.

"Q. Do you know where they came from?

"A. I did know; I don't know now. There are something

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[fol. 795] like—or there have been something like fifteen thousand or twenty thousand samples of various kinds come to my laboratory since ten years ago, and my memory of individual samples is quite poor.

"Q. Well of course you don't profess to want us to understand that you have had fifteen thousand or twenty thousand samples of pipe from Columbus that have been——

"A. Oh no, all kinds of samples.

"Q. Do you know the occasion why those pipes that were in the ground for fifteen or twenty years were brought to you for examination?

"A. In some cases it was merely out of curiosity of the person who dug up the pipe. In other cases, as in the case of the University, they wanted to know what kind of pipe it was, whether steel or wrought iron pipe, in order to guide them in their future purchases.

Q. Well they didn't know the history of the pipe did they, the University people?

"A. Yes they know.

"Q. That is you mean from their records they know when they were put in?

"A. Yes, sir, from their records they know when they were put in and of course they have a good record of the soil conditions.

"Q. Well, isn't your estimate of twenty years for the life of a steel pipe made up largely from what you have read as to the opinion of other experts?

"A. That has entered largely into it but I want to emphasize this, that as a chemist—a metallurgical chemist I am able to evaluate the opinions of others because of the reasons they give for their estimates; that is, any well trained metallurgical chemist would know from what is said or written by another whether he is basing his opinion on proper and logical things or whether he is not.

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[fol. 796] "Q. If you know ad a matter of fact that there was steel pipes in the ground in Columbus, in constant daily use by the gas company for distribution that had been in for from twenty-six to thirty years and were serving without leakage now, would that affect your opinion any as to the life being twenty years?

"A. I would be very much surprised if there were not such pipes in the ground.

"Q. Well suppose that were the fact, would it change your conclusion any?

"A. No.

"Q. That is the mere fact that the pipes were from six to ten years longer in the ground than you estimate the life of the pipe, would not affect your conclusion at all?

"A. No, because the whole thing is a matter of averages, not of what one pipe has done.

"Q. Well, suppose that a very large part of the gas system in this community had been in over twenty-five years and was serving with an average leakage of less than six per cent to the system, would that affect your conclusion any?

"A. I am always open to facts."

By Mr. Butler:

Q. By the way, Professor, in determining the condition of a distribution system do you consider the amount of gas that is being lost in the system?

A. No.

Q. That means nothing to you?

A. It would mean something; that is, it would be interesting data but it would not have any important bearing on my estimate of the condition of the property.

Q. Well, I was just struck by the fact that the Gas Company's attorney here seemed to think it did.

A. Of course, if a gas plant were leaking abnormally it

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[fol. 797] would lead one to suspect that the pipe system was needing attention. There is some leakage, of course, in all pipe systems.

Mr. Butler: I will read further;

"Q. I say would that——

"Mr. Scarlett: You are not referring to whether it is cast iron or steel pipe or what it is? As a matter of fact

the record shows that the early pipe was practically all cast iron and naturally that would be good.

"Mr. Williams: I beg your pardon.

"Mr. Scarlett: He is assuming that you are referring to the steel he has described, whereas the pipe in the early history of the Company was mostly cast iron pipe.

"Mr. Williams: I am asking if he knew there were large portions of steel pipe that had been in use for more than twenty-five years and were still serving with one hundred percent efficiency, would it affect his opinion any as to the probable life of the pipe.

"Mr. Godown: You should explain the diameter and the kind of pipe.

"Mr. Scarlett: With one hundred percent efficiency, that is your conclusion. There is no real evidence of that

"Mr. Williams: The evidence here is that the leakage is less than six per cent.

"Mr. Scarlett: Yes, but also the pressures are different under which you serve your customer and that at which you receive the gas.

"Mr. Williams: Oh well this is cross examination and——"

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[fol. 798] "Mr. Scarlett: Well unless your question is based on facts in evidence——

"Mr. Williams: On cross examination you are not limited to the facts in evidence. You can put up any hypothesis to the witness you desire, and he can answer or not as he sees fit.

"(Question read.)

"Chairman Marshall: I think he answered the question. Can you finish tonight?

"Redirect examination.

"By Mr. Scarlett:

"Q. What is the effect, if there should be any limestone around the pipe, what effect would that have upon the life?

"A. It would increase the length of the life of the pipe

"Recross-examination.

"By Mr. Williams:

"Q. There is very little limestone in the soil of Columbus, isn't there, Professor?

"A. Yes, the proportion is quite small, although you can always find under the microscope crystals of carbonate of lime, but it is very small."

By Mr. Butler:

Q. I promised you that when I finished reading that if you desired to make any comment on that I would give you an opportunity.

A. How much time do I have for this comment? I would like to make a speech about half a day long now.

Mr. Turner: Go right ahead.

Q. Do you think that is long enough to explain it, Pro- 613

[fol. 799] fessor—half a day to explain it?

A. To begin with, I would like to win Mr. Butler's confidence by pointing out some of the fundamental differences in the picture of 1919 and 1925; remembering that the questions asked in the 1919 hearing were questions very general in nature, really hypothetical, and answered not on the basis of experiments or examinations made in that particular case; only the information and data which obtains in the general practice.

Now on page 291 of this same Bureau of Standards Journal of Research, from which I have already quoted, I will read the third paragraph:

"It will be found that, on the average, the pitting factor was smaller for the older and more corroded specimens"——

This term "pitting factor" has a special definition which I will not bother with just now; it does not have anything to do with what I want to get out of this paragraph——

"And that the factors for the 1926 and 1928 specimens were nearly alike and much smaller than for the specimens removed in 1924. The fact has an important bearing on the theory of corrosion."

Remember that this is a number of this Journal that came out in August, 1929.

"A number of authors have suggested that the presence of corrosion products accelerates corrosion, because the corrosion product is cathodic with respect to the uncorroded metal. From this, the inference has been drawn that a pit once formed tends to deepen at an increased rate because of galvanic action. The theory that the limitation of oxygen at one portion of a surface tends to make that portion anodic also suggests accelerated corrosion at the

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[fol. 800] bottom of pits. The data in Tables 5, 6, and 7 do not substantiate this conclusion but rather tend to show that deep-corrosion product retards corrosion and that, in the later stages, increased corrosion is in the form of spreading more than deepening of the corroded areas, although the latter process continues at a decreasing rate. If later data bear out this conclusion, it will be evident that in determining the future life of a pipe line from the depth of corrosion at the time of inspection it will be incorrect to assume, as is now frequently done, that the depreciation is proportional to the age of the line."

Now what I want to point out is this, that that paragraph in this Journal published in 1929 correctly points out the understanding and theory of corrosion as it had been earlier, exactly the understanding and theory of the corrosion as I had testified in 1919, speaking purely theoretically in answer to general and hypothetical questions. But now in the meantime, in 1925, I made these extensive examinations of Columbus soils and of the pipes and got actual facts about them and found that the Columbus soils were characteristically alkaline, a thing that I had never known before because there never had been any occasion for determining that specific characteristic of the soils, although I had known that they contained limestone, at least in places.

I mentioned in the testimony that has just been read by Mr. Butler that sandy clay was acidic or corrosive in nature. I perhaps should have explained at that time that in general a sandy soil refers to a soil which contains silica sand, silica being the anhydride of silicic acid. Now the

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[fol. 801] careful detailed examination of Columbus soils to find their connection with corrosion which was made in 1925 shows that the sand in Columbus soil is not silica sand but is limestone sand, and it is from the solution of this limestone with the carbon dioxide of the atmospheric waters that makes the calcium bicarbonate which is the soluble alkali of the soils.

The use which Mr. Butler has made of my testimony concerning the nature of Columbus soils in 1919 as compared with my testimony about the nature of the soils in 1925 would be exactly similar now if any future time a case were before the Commission in which were involved the question as to whether the limestone in the Columbus soils were ordinary hexagonal or orthorombic crystals; that might be pertinent to some other case but it is not pertinent to this case.

Now about the blotter or sponge effect of a scale that may have formed on a pipe; if the pipe is brought here in the room just as a bare dry pipe, and another pipe is brought here in the room beside it coated with a damp scale or with a scale like the scale which is on these Columbus pipes, the scale pipe will undoubtedly have a poorer chance of resisting corrosion here in this dry atmosphere than the unscaled pipe. The point is that in the ground the ground is wet and it is more pervious and more spongelike to water than is the scale on a pipe; therefore the scale is, in effect, a dam between the waters of the soil and the pipe when the pipe is in the soil. When the pipe is out here in the air where there is no soil around it the scale is a better holder of water than is the dry bare pipe.

I want to point out again that the principles and the
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[fol. 802] theory which I answered—or which I gave when I answered the questions in 1919 are still good. There is one exception to that, that has now been upset, and that is the one I just read from the Bureau of Standards Journal of Research of 1929, and which I myself had found to be incorrect in the detailed researches that were carried out in 1925 in connection with the examination of the pipe and soils here in Columbus.

Q. Which one was that, Professor? I am afraid my mind wandered; what was that you found to be incorrect?

A. In the testimony which you read you quoted me cor-

rectly I think that I said that the presence of the corrosion products on the pipe were accelerators of corrosion, making corrosion go on more rapidly; that, as I testified in 1925, is wrong, and as I just read from this number of the Journal of the Bureau of Standards, is wrong. But this paragraph that — just read shows that that was the correct theory as the theory was understood previous to that time. In other words, the difficulty which counsel for Columbus is having in reconciling my conversion is perfectly clear and shows in this paragraph on page 291. It is just an example of how we learn more facts as years go by and the research is carried out, and then we can substitute facts for hypothesis.

Q. I am not having any trouble, Professor.

A. Well, I am helping you so you won't have any trouble.

Q. I don't have any. Well, Professor, didn't you change your view on another rather basic matter about the age—the life age of pipe in the ground?

A. No, I don't think that I did. I was asked a general question; I gave a general answer. Of course any engineer,

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[fol. 803] even the most untrained engineer, would know that when you can substitute actual experimentally determined facts for hypothesis or theory, the facts always must have way.

Now in 1919 the only thing before me was a hypothetical question and I gave that a hypothetical answer.

In 1925 I had a large accumulation of facts before me which of course must be the thing that always rules.

Q. But, Professor, in 1919, the life age was an accepted method, was it not?

A. In lieu of any better understanding it was.

Q. But you had—

A. It seems to me that—I cannot understand how any intelligent person can use the life age process in substitution for facts that are obtainable. In one case it is purely a theory and in the other case it is fact of measurement. And life age never has been based upon the accumulation of fact in any specific case. In lieu of a better method that is a method which one would use in order to set up a method of account or bookkeeping; one has to have a method of bookkeeping.

Q. Why did you use it then in 1919, Professor?

A. I had no facts about the actual condition of the underground property of the Columbus gas companies.

Q. Well, my dear Professor, are you justified in using an unsound method merely because you have no other method?

A. That is exactly what is done when the life age tables are used—absolutely exactly what is done. There cannot be any question about that in the mind of any engineer.

Q. Well, I am getting at the similarity of it; I don't quite get your point of view, Professor, that if a thing in itself is

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[fol. 804] not right, why you should use it because you have no other method; how do you explain that?

A. Well, I think that thing is so clearly self-explanatory that the Commission can certainly understand it.

Chairman Geiger: Well, could I ask just this simple question, Professor. As I understand your testimony which has been quoted, you thought that the life of the field pipe, concerning which you then testified in the Columbus soil, as you then understood it to be, was 20 years, now what is your judgment as to the life of a steel pipe now, as you now know the Columbus soil?

The Witness: I have not formed any opinion or made any statement of the life of a pipe in the soil now because I am convinced that we do not have enough data yet.

Chairman Geiger: Well, now wait a minute; you have testified that the pipe that is in the ground is in 90 to 91 per cent. condition?

The Witness: That is right, that is, it is now 91 percent as good as it was when it was new.

Chairman Geiger: Well, has that no reference to the age of the pipe?

The Witness: If we have the average age of the pipe in the City of Columbus as 20 years—I don't know what it was but we will take that as the average—and say that in 20 years it has decreased eight per cent in condition, that does not mean that in the next 20 years it will decrease eight per cent, because, as the Bureau of Standard's work shows, and as my own examination has shown, the corrosion proceeds at a decreasing rate.

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[fol. 805] Chairman Geiger: I see. The older the pipe becomes the better seasoned it is and the longer it will last?

The Witness: Yes, the more it is protected by the scale that builds up.

Mr. Butler: I hope that is true as to an old man.

The Witness: Well, they don't usually build up a protecting scale.

Chairman Geiger: Well, now, may I ask one other question; I don't want to do this, Gentlemen, but I want to keep my mind on what it is. You have spoken several times in your testimony, and especially that from which quotations have been made, as to the life of a pipe; now just what do you mean by the life of a pipe? When you speak of the life of a thing, you say that some time it is going to be dead; now when is a living pipe dead—when it has a certain number of punctures, a certain scale condition, or a certain decayed condition? When is it considered to be at the end of its life?

The Witness: That is the thing which I said awhile ago we have not sufficient data yet to make any statement on.

Chairman Geiger: So that when you spoke of the life of a pipe in 1919 you really did not mean the life of a pipe?

The Witness: Well, all I meant was that it had been taken for granted in a good many ways that you cannot expect more than 20 years of service out of a pipe.

Chairman Geiger: Well, you want to change that now?

The Witness: Yes, sir; that was——

Chairman Geiger: Because these pipes concerning which you were testifying in 1919, if they were new that year, have

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[fol. 806] now been in the ground eleven years, and if their life is only 20 years they have used up half of that lifetime since the date you testified?

The Witness: That is right.

Chairman Geiger: And that would only leave 50 or 45 per cent condition?

The Witness: That shows the inaccuracy of my testimony in 1919, which was given on the general basis of—just a general expectation of steel pipe. In the meantime I have measured the condition of these pipes and know that that old method in 1919 is not correct.

Chairman Geiger: Let me ask you just one question again and I will stop: assuming that there is a pipe in the

ground that is pitted so that it becomes necessary or advisable to repair the pipe, assuming that the pipe can be repaired by rubber plugs or by some other method, what age would you consider that pipe to be in or what condition would you consider it to be in, when it requires some mechanical device to overcome its then condition?

The Witness: Well, the extent depends largely on whether that pipe were generally corroded or just corroded in the field that has to be plugged; if it is generally corroded numberous places and got to that point, I would say it is a dear pipe.

Chairman Geiger: All right.

By Mr. Butler:

Q. I think in 1919, Professor, you said you would not undertake to estimate or determine the condition of a pipe unless you had a section out and had it cut and had it before you and had your microscope; you have changed your view about that too, haven't you? 621

[fol. 807]

A. In the meantime I have had lots of pipe cut out and examined it under a microscope and have checked that with examinations in the field and I know now how to examine it in the field. I did not know in 1919.

Q. I say, you have changed your view about that?

A. I have bettered my technique since then. No, sir, I have not changed my attitude in the least.

Q. How many pipes this time did you examine in the ground?

A. This fall of 1930?

Q. Yes.

A. 36.

Q. When did you make those examinations?

A. I think it was largely during October and perhaps the early part of November.

Q. Who was with you?

A. Part of the time Mr. Walker, part of the time Mr. Harrison and part of the time Mr. Strickler, and a crew of men who had the trenches open.

Q. Mr. Mullin?

A. No, I don't——

Q. You hardly had enough samples to go around, did you, with all of them?

A. I did not catch your question.

Q. I say you hardly had samples enough to go around with all of them, did you?

A. I don't know what you mean.

Q. Are those the samples that are in here—some of the samples?

A. No.

Q. I mean some of the examinations that have been reported here?

A. Some way or other I am at a loss to know just what you refer to.

Q. Well, we have testimony here about a number of examinations and——

A. You see, the examinations made this fall were

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[fol. 808] examinations made in the trench.

Q. It changed the whole technique this time; you cut them out before, didn't you?

A. Yes, sir.

Q. Before you had about five inch sections, didn't you?

A. Oh, from five inch up to a yard, whatever was convenient.

Q. And you had about how many sections before you?

A. 65 I think it was.

Chairman Geiger: That was in 1925 or 1919?

The Witness: Yes; I had nothing to examine in 1919.

Chairman Geiger: Well, did you testify as to the then condition of the pipe in 1925?

The Witness: I testified to the condition of the pipe in 1925, yes, sir.

Chairman Geiger: What per cent condition did you give it then?

The Witness: Between 91 and 92 per cent.

Chairman Geiger: And you testify now it is between 90 and 91?

The Witness: Between 91 an 92 per cent.

Chairman Geiger: Just as good now as it was five years ago?

Mr. Turner: Objection; the evidence shows that more than 100 miles of pipe have been put in since then, which changes the percentage.

Chairman Geiger: I think you are right on that.

Mr. Turner: Yes, I am bound to be.

Mr. Butler: Well, isn't it a fair question?

Mr. Turner: No not without taking that into considera-

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[fol. 809] tion; I think the Chairman recognizes that; he hadn't thought of it, that is all.

Chairman Geiger: Well, then let me ask the other question; you have said that the condition of the pipe now including the whole system was in between 91 and 92 per cent condition, is that so?

The Witness: That is correct.

Chairman Geiger: Now is that or isn't that the average condition?

The Witness: That is the average condition, yes.

Chairman Geiger: Some of it that had been put in since 1925 is practically as good as new?

The Witness: Yes, I think that I have depreciated most of that new stuff about two per cent, as I remember it. On the other hand——

Chairman Geiger: Well, what is the greatest depreciation put upon any section of pipe in mileage or in any other way you wish to designate?

The Witness: 40 per cent; that is, 40 per cent depreciation on one piece.

Chairman Geiger: And for how many miles is that?

The Witness: And that one piece—that one piece represents 1/38 of the pipe in Columbus—or 1/36.

Chairman Geiger: That *about* be about ten miles?

The Witness: Something like that.

Chairman Geiger: All right.

By Mr. Butler:

Q. Did you in 1925 examine all of these samples and give your judgment as to the amount of depreciation they showed?

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[fol. 810] A. All the samples I reported on, yes, sir.

Q. Did you follow the Elmes method?

A. No, I paid no attention to what Elmes was doing; I really don't know what he did; I did not want to be influenced in any way by what somebody else was doing.

Q. Did you consider weight?

A. No, I did not.

Q. Loss of weight does not mean anything to you?

A. Well, that is another method.

Q. Well, I know, but——

A. There are always several methods in which one can arrive at a measurement; I did not use that method; I thought it would be a little too fair to the Company, as a matter of fact.

Q. Why?

A. I wanted to rather be sure that I was not giving the Company more than it should have so I was a little more severe; it is always easy for people, including counsel for the City and others, to imagine that a witness is biased by his employers and his psychology is affected by it, and I rather leaned over backwards to be sure that I did not do that, and I thought—or I figured that the method of measuring the pits was going to be sure to leave me in a position of not having accepted an easier way than if I took some other method, and I thought it was a more accurate method.

Q. You did not take into consideration wall thickness?

A. Oh, yes, I did; maybe I did not understand your previous question; I took into consideration wall thickness in this way, that I measured the deepest pit and also measured the thickness of the wall and from that calculated the percentage of the thickness that was corroded away; but I did not take that to be what you meant in your question a few minutes ago.

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[fol. 811] Q. Well, that leads up to the question of whether all the pipes are of the same thickness?

A. Well, of course, we know that all pipes are not of the same thickness. Every pipe that I took in 1925 was calipered to get its thickness; I did not take it from tables but I calipered it.

Q. Could you tell from that whether there had been any loss of wall thickness or not?

A. That is what I calculated, the loss of wall thickness.

Q. Against what?

A. At the depth of the deepest pit. You can always find in a pipe traces of its original surface; it is very rare that you cannot, and take that as the pipe's original thickness.

Q. Well, I think possibly we understand each other to the extent that we are each theorizing different things; and you calculated wall thickness and considered wall thickness

with respect to the particular place where you found a pit, but you did not take into consideration any general loss of wall thickness as Elmes did?

A. No, I did not measure the general loss of wall thickness.

Q. That is, you used the same method this year that you used in 1925?

A. No, in 1925 pipe were cut out and taken to the laboratory; this year I measured the corrosion pits as they were in the mains. I could get at longer lengths of pipe for one thing that way.

Q. Well,——

A. And it is much less expensive.

Q. Well, how did that differ from the laboratory work?

A. In the laboratory I had the pipe where I could measure its wall thickness. In the trench I could not, so I had to take the thickness from a standard table of thickness for

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[fol. 812] pipe of various sizes.

Q. You were down in the trench this year?

A. Yes.

Q. Oh, you took them from the standard thicknesses?

A. Yes, sir.

Q. Well, do you know that there are variations?

A. There are variations one way or the other but in the long run the standard thickness comes so near to the average of the thickness that there is no difference in calculation; the difference you would get in the end would not be one-tenth of one per cent. The reason why I know that is because I checked it up in 1925.

Q. Well, as I remember, in 1925 nobody could agree with what the original weight had been or the original thickness had been and that was the point exactly.

A. Well, nobody asked me about it. I might have testified about it. But I measured the wall thickness and calipered it. I had no doubt about how thick it was.

Chairman Geiger: Let me ask you just one question there; is there any sort of corrosion or deterioration to a pipe that will shorten the wall thickness except that which is around the pitting?

The Witness: Yes, there is.

Chairman Geiger: There is not any general wear and tear on the surface of a pipe inside or outside, is there?

A. There is outside.

Chairman Geiger: What is it—oxidation?

The Witness: It is rusting and corrosion; the same kind of thing that takes place——

Chairman Geiger: Well, even with oxidation, instead of

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[fol. 813] decreasing the diameter it would increase it, wouldn't it? On account of the scale?

The Witness: Yes, but that would not be the thickness of the pipe; that would be the thickness of the pipe plus the scale.

Chairman Geiger: Well, I have not been able to bring my mind to this piont, that steel or iron pipe laid in the ground would wear away evenly in diameter either by inside erosion on account of the flow of gas or water, or whatever it was, or by outside corrosion, unless you would have some pitting in connection with it.

The Witness: You are absolutely right. That is the reason why I took the pitting method as being the correct way of measuring the condition of the pipe.

By Mr. Butler:

Q. Professor, I think we will never understand your method—"we" is the editorial name for myself—unless you bring one of those samples in, one that has a couple of pits, and just show the Commission how you depreciate it.

A. I will be glad to do it if I can get hold of some pipe.

Chairman Geiger: You mean if you do that you will go out and cut a section of pipe out of the ground now that is pitted.

The Witness: If the Commission prefers to have it done that way.

Chairman Geiger: I am not making any preference; the only thing is, if you do that, would it or not be of value for you to take out your new section as *as* near the point that you took out a section in 1925, as near as possible, in order

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[fol. 814] to determine whether there has been any determination, by time or otherwise, in the five year period from 1925 to 1930. In other words, Professor, would or would

not a lapse of five years from the examination in 1925 to an examination of a like section of pipe from like soil in 1930 give you any basis upon which you might give us an intelligent judgment of how much that pipe had depreciated in five years?

A. If a reasonable number of pipes were taken up that would be all right.

Chairman Geiger: All right.

The Witness: I don't think that one pipe would mean anything but take up 20 or 30 of them would be all right.

Chairman Geiger: The only theory I have in mind is this; we are theorizing about what those pits do and how they progress and now if in 1925 you found a pitted pipe and you have a sample of it, and in 1930 you get another pitted pipe out of the same soil, at the same place, and can look at the pits, then you can discard your theory and say whether it is a fact or——

Mr. Turner: You would have to get—to take the whole field covered in 1925 to make a comparison because——

Chairman Geiger: Well, if you would, that is too large.

Mr. Turner: Because you get it by averages. Any one piece at one place will not show the condition of the property; that is a fundamental in the law of sampling.

Chairman Geiger: You don't understand me Mr.——

Mr. Turner: I catch what you mean, but I say to you that in order to get that picture we must go to all of the places that they went to in 1925, and take from all of them

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[fol. 815] a sample and make the calculation based upon all of them, because we have got to get something that is going to reflect the picture of the whole plant; that is what was done in 1925. Now the only way we can do here to get the picture is to go back to those same places and take out of each place a sample and evaluate those samples and compare that evaluation with the value found in 1925. In other words, you cannot pick out one or two; you might take 30, and I will agree that under the testimony here as to the law of averages, the theory of probabilities, that that work out all right; take half of them.

Mr. Butler: Of course, Mr. Turner, our own view at this table is that you cannot start with a method as ridiculous as this has been since 1925 and by any process bring it into something that will make it worth while.

Mr. Turner: I will be glad to have the City put on some experts of recognized ability in that line who will testify differently. I want to hear them.

The Witness: Mr. Butler has referred to a method which I have used as being ridiculous, and I would like to point out to him that it is the only consistent and serious attempt to arrive at the facts about the underground distribution system that I know of; that it was one of the very first at least to seriously make a real effort to find the condition of the distribution system of a gas company. Now I feel a little bit worked up about your use of the term "ridiculous".

By Mr. Butler:

Q. Professor, if you were called in before the aggregated ability and experience of The Columbia Engineering & Management Corporation and asked to give them some idea of the life of this distribution system, about which 630
[fol. 816] you have now testified three times, and of which you have known something for some eleven years or more, what would your answer be?

A. About the future life of it?

Q. Yes.

A. Well, as I have already told the Commission, I have made no estimate of that.

Q. Well, can't you? Can't you? Suppose I were buying it, Professor—if you can imagine such a thing—and were calling you in, knowing your observations and experience, and would say to you "Now it is important that I should know in a rather practical way, that I should have an answer to that question", what would you say to me?

A. Well, if that question were being asked by a client for my best judgment, I would want to take a day off and answer it. But being asked under the circumstances under which it is asked, when I know that the answer will not be used as it would be used by a client, I refuse to answer that.

Q. Oh, Professor, I shall cherish the answer; I shall not misuse it.

A. Oh, I know all about that.

Q. In other words, when you are called as an expert here you take into consideration the fellow who may get your answer; you think that is an excuse, because I may under-

stand it, because I do not have the ability; the Commission will judge of this; please tell them, but forget me.

A. If the Commission would want to ask me the question about what would be the probable life of this gas company and say that they were expecting to buy, I would give them the very best judgment I could in the matter.

Q. But this is cross-examination and I am putting that to you. One more disagreement, Professor, will not mean

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[fol. 817] very much.

A. Well, I have told you that I have made no estimate.

Q. But I want you to do it; I am asking you to do it, and with General Turner's permission I will give you a day off; I seriously think that is important. I know the difficulties of this.

Mr. Turner: Now, Mr. Butler, if you simply give him that data and ask him to spend a day's work at our expense, I am afraid he would come back with an answer that I would not be satisfied with, because you have not taken into consideration the question of the approximate amount of replacement to be put in over a period of years, and I think that is a factor that would be very important in such an estimate; in other words, not only what is the life of this property now but what would it cost in the matter of replacements to keep this property in an efficient working condition for 30 or 40 years; what would be the replacements? You might not be able to give him the dollar value but you could give the percentage of replacements in that time, I would think.

The Witness: That is the point exactly. A client who asks that question would be able to evaluate the answer in such a way as to use such truth as there was in it to the best advantage. The Commission is not in a position to do that, and I do not want to mislead the Commission.

By Mr. Butler:

Q. We will help you to prevent that. But for Mr. Turner's point of view you may bring in and explain in connection with your answer what sort of maintenance you assume; I am leaving it with you, with a little cross-examination to follow; don't you see?

(No reply.)

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[fol. 818] Q. Well, anyway, I shall leave it with you or your conscience.

(No reply.)

Q. Do I understand, Professor, that an ordinary way of inspecting gas pipes is to inspect two or three out of 200?

A. The methods of The American Society for Testing Materials for inspecting shipments of pipe is to take one out of every 500.

Q. No other inspection?

A. One out of every 500, inspect that one pipe and analyze it and test it.

Q. As they come from the milles?

A. As it is shipped from the mills; that is as they are turned over for shipment at the mills.

Q. In other words, if this company were to buy pipe from the Pittsburgh mills, we will say, they would be furnished with a certificate of inspection; that is the ordinary way?

A. Well, of course, that depends on the kind of a contract they have; if the contract is the kind of a contract which is specified and recognized by the American Society for Testing Materials, there would be a number of different kinds of tests made on one pipe out of every 500, and of course the company would have a copy of that test; the mill would have a copy of the test.

Q. Well, you say, if they followed the standard; you see, I don't know; I am asking you, out of your abundant knowledge of the gas business and gas instruction, to tell me how they actually do it; what is the method?

A. Every company follows its own inclinations in that matter and I don't know how the Columbus Gas & Fuel Company buys its pipe. That is outside of my examination in this case.

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[fol. 819] Q. Do you know how they have tested them in the past after they got them into the ground?

A. I did not catch your question.

Q. After they put them into the ground are there any tests made?

A. Oh, yes, the pipe line is always tested for tightness by soaping it and putting it under pressure.

Chairman Geiger: Right there, Professor, is there any standard of condition of a line worked out through the experience of years that would arise from putting a pipe line

under a certain pressure to ascertain how much leakage there is; do they give you any method of obtaining value or present condition?

The Witness: A new pipe line when it is put down should not have any leakage.

Chairman Geiger: But suppose there is one been down thirty or forty years; you put the same pressure on it and you found there is a certain percentage of leakage; would or would not that give you any data from which you could estimate its present condition?

The Witness: Yes, that would give some information that would be valuable.

Chairman Geiger: It would not be hard to do that, would it?

The Witness: Well, it might be pretty hard; that of course involves metering the gas at a central metering station and——

Chairman Geiger: All right.

Mr. Turner: If the Commission please, we will give to you something that is better than an experiment; we will

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[fol. 820] give you actual figures of leakage, and that beats experiment, I think.

Chairman Geiger: Well, now that is the only thing I was asking the Professor. If you had the actual figures of leakage and you have also the pressure under which that leakage accurs, would or would not that information afford you any element by which you could judge of the present condition of the pipe line?

The Witness: Oh, it certainly would be an element.

Chairman Geiger; All right; they said they would furnish that.

Mr. Turner: We have already furnished it in Exhibit 10 6.5 per cent I think it is.

Chairman Geiger: Now, Professor, assuming that the purchase at the gate here are 6.5 per cent more than the delivery through the pipe to the customer, would that or would it not be an element from which you could determine what the present condition of the pipe lines are underground?

The Witness: It would be an element. One would have to take those figures and compare them with the figures or systems in other cities; new systems and old systems; just standing by itself it would not mean very much.

Chairman Geiger: It would mean simply there was a little over six per cent leakage?

The Witness: Well, it would not necessarily mean that; it would mean that they sell six per cent less than they buy the difference may be due to inaccuracies in the meters and other things.

And thereupon the further hearing of this matter was adjourned until Wednesday, December 17th, 1930, at 10:00 o'clock A. M.

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[fol. 821] Wednesday Morning Session, December 17th, 1930

And also—

D. J. Demorest, resuming the stand for further cross-examination, continued his testimony as follows:

Cross examined by Mr. Butler:

Q. When did you last examine this holder, Professor?

A. Some time this fall. I think it was probably along about the 1st of November.

Q. Just what did you do?

A. I climbed about the holder and scraped at it with a file to see what I could see about the metal.

Q. That rather accurately describes what you did?

A. Yes, that rather accurately describes it.

Q. Did you find any pits?

A. Very few pits that I could find. The only place where the metal was bare enough to be able to see the metal was on the dome, and the dome was very free from pits. The holder was in good condition so far as paint was concerned, and, of course, such pits as are in the metal are not easily findable when the paint job is good.

Q. Were you estimating the condition of the paint or the condition of the holder?

A. The condition of the holder as far as I could see it.

Q. Somehow I got the impression you did not see it very far?

A. I climbed all over it. I walked around the dome. And I did not, of course, scrape the paint off of the holder, but

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[fol. 822] as far as was possible I examined the holder. I was surprised to find that the metal on the top of the holder, on the dome of the holder, where the paint was blistered of- a little was in extraordinarily good condition. It looked as good as new or practically so. I could find the metal, naked metal, in lots of places there by scraping off these blisters of paint.

Q. Well, in 1919, when you testified before the Commission, to which we have already referred, you did find some pits?

A. I did, yes, sir.

Q. Did you make any examination this time to see whether they had grown shut, or are they still there?

A. Oh, those pits are undoubtedly still there.

Q. But you did not see them?

A. I did not see them. The holder is all painted.

Q. What depreciation did you fix for the holder?

A. I didn't fix any depreciation.

Q. Oh, you didn't fix any depreciation? What depreciation do you fix for the holder?

A. I have not bee- asked to fix any depreciation.

Q. I am asking you now.

A. So I haven't given any thought to it, and I would have to answer you rather offhand.

Q. Well, what do you say, Professor?

A. Oh, I should say, and I, of course, want it understood that this is quite an offhand estimate, that that holder is in 85 per cent condition or better.

Chairman Geiger: Does that include any possible element of obsolescence?

The Witness: Yes, sir, that would include the element of obsolescence.

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[fol. 823] Q. How much do you attach to obsolescence?

A. As far as I can see the holder is not obsolete in any way.

Q. Was that built for a natural gas plant?

A. I think it was built for manufactured gas. That makes no difference, however, in the usefulness of the holder. It is just as good a holder for natural as it is for artificial. It functions the same way.

Q. You think it is the ideal location?

A. As far as I know, it is just as good a location as any other location, except perhaps the fact that it is surrounded on all sides by railroads. That might make its location not quite so good, but aside from that I do not see why the location there is not just as good as anywhere else.

Q. Professor, without any further cross examination of you, I want to read from your testimony, given in 1919, and as I said yesterday when I have finished I shall give you any time you desire, or if, while I am reading, you desire to make some comment, do not hesitate to interrupt me. This begins on page 573 of this transcript:

"And also—

"D. J. DEMOREST, recalled on behalf of the City of Columbus, having been heretofore duly sworn, testified as follows:

"Examined by Mr. Scarlett:

"Q. You have been on the stand before in this case, have you Professor?

"A. Yes, sir.

"Q. Since your presence on the stand have you examined the gas holder of the Columbus Gas & Fuel Company?

"A. I have.

"Q. Just state what you did in the examination of that 638.

[fol. 824] holder?

"A. I climbed over the holder from top to bottom and examined the condition of the steel of the holder by probing it with my knife blade in order to determine how much the steel has corroded and pitted.

"Q. What did you find in that investigation as to the condition of the holder?

"A. I found the steel was about in the condition that one would expect it would be after twenty years of service.

"Mr. Williams: Well, we ask that to go out. What he expected it to be is certainly not competent.

"Q. Just describe the condition, Professor, rather than giving a conclusion.

"A. The sheets, especially the one-eighth inch sheets, I examined and found that in innumerable places the steel

was pitted to an extent as much as one-sixteenth of an inch.

"Q. What in your opinion is the physical condition in percentage of that gas holder at the present time, or what in your opinion is its expectancy as based on its present condition?

"A. I would estimate the thinner sheets of the holder, that is, the sheets that go to make up the part of the tank that rises and falls with the gas supply, to have been about two-fifths done as far as its life is concerned, judging by the depth of the pits, because the life of the tank is done when the pits on the tank have gone through.

"What would you say from your inspection of this holder and the fact that it has been there in its location since 1899 as to the probable life of the entire holder or at least as far as its real value is concerned, what would you say was its percentage condition?

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[fol. 825] "Mr. Taylor: Well, he has already stated that, two-fifths gone.

"The Witness: You are asking now concerning the entire holder as distinguished from——

"By Mr. Scarlett:

"Q. Yes.

"A. Well, I should say that the tank has life—has lasted two-fifths of its reasonable life, judging from the present extent of the corrosion.

"Q. How many sheets are there in that tank approximately, if you know, Professor?

"A. I did not count them, I could only make a guess at it now. Do you mean how many sheets high?

"Q. Well, if you haven't any knowledge on that, say so.

"A. I didn't count them and I could only guess at it now.

"Q. You have spoken about the thinner plates. What has the condition of the other plates and where are the thinner plates located that you have described?

"A. The thinner plates that I spoke of are plates that go to make up the rising and falling part of the tank in which the gas is contained, this part that floats up and down in the water.

"Q. Are those what are known as lifts?

"A. Those are the lifts.

"Q. How many of them are there?

"A. It is a multiple lift tank. I should say there are three lifts, although I did not make a record of just how many lifts. But I think it has three lifts.

"Q. And those lifts are the same thickness, are they?

"A. Yes, sir.

"Q. But the outer side of the tank has thicker lifts, has it?

"A. Yes, sir. The part that has to stand the pressure of the water of the tank is heavier.

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[fol. 826] "Q. What, if you know, makes up the true value of the tank, those lifts or the other casing?

"A. The labor cost in building the tank, I should say is largely in the lifts. The value of the metal is more in the outer part.

"Q. What would you say then as to fifty years as the fair life of the tank, Professor?

"A. I would say it is a reasonable estimate of the life of the tank.

"Q. Now, when you were examined before, I first asked you about wrought iron and steel, and there is a question whether wrought iron was left out of the question in the question as finally put to you. Now, I will ask you whether or not in your opinion there is any difference, and if so, what it is, between the steel pipe and wrought iron pipe used here by the company for gas purposes in the manner in which it has been used in the soil of Columbus, as to expectancy of life?

"A. I do not think that one can expect wrought iron to have a longer life than steel, underground condition; wrought iron will undoubtedly last better"——

Then you were interrupted.

"I did not catch that.

"A. I say wrought iron lasts better under such conditions of service as hot water service in a building, but not better under corrosion conditions of the ground.

"Q. Then your opinion as far as the wrought-iron pipe of the company is concerned here is that its life should be

estimated on the same basis that you base steel pipe or whatever form the question was put to you before?

"A. Yes, sir, there have been some very extensive investigations on that point, and the result of those investigations has been to show no longer length of life for wrought

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[fol. 827] iron pipe than for steel pipe.

"Q. Did you make any tests of the water you found in this *this* tank?

"A. Yes, sir, I took a beer bottle full of water as a sample to my laboratory and tested it and found it to be acid; an acidity equal to two and one half cubic centimeters of tenth normal acid per litre,"—whatever that means.

"Q. The holder is located near through railroad tracks, isn't it?

"A. Yes, sir, right in the midst of a number of railroad tracks, through tracks.

"*A.* What effect would its closeness to the railroads have upon the probable contents of the water?

"A. The undoubted effect upon the water would be to make it acid, because the sulphurous and sulphuric acid produced by the coal burned in the locomotives and engines.

"Q. Did you make any tests, Professor, under the spots that had been painted on the holder?

"A. Most of the tests I made were on spots that had been painted, because it was apparent that the places that had been most badly corroded had been daubed over with paint more or less frequently, and these were the places where I found the deep corrosion pits.

"Q. Now, are there any signs of new corrosion pits taking place over the holders?

"A. Yes, the paint was scaling in a good many places, and wherever one found the paint loose and scaling off, the knife showed that there was new rust forming under the paint in those places where the paint was scaling.

"Q. Have you, Professor, had any experience as to the effect of pressure and temperature on gases?

"A. I have been dealing with the subject of gases for the past eight years."

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[fol. 828] And then he passes onto a consideration of pressure that I think has no relation to the matter in hand, and

I pass it over. There is one question and answer I should like to read at the end of that.

"Q. Would you say with the per cent. of physical condition determined in the pipes, deterioration or corrosion could be measured by the percentage of leakage in the main system?

"A. No, I hardly think so at such a low pressure as gas is used in the main, only ten ounces. If it were a high pressure main, you probably could, but the strength of good compact clay soil is enough to prevent the wastage of gas a good deal, even if pipes are pretty well gone to pieces up to a certain point in the history of the pipes."

Now, on the cross examination by Mr. Williams.

"Q. Now, you spoke awhile ago, Professor, of a difference of 3.3 per cent between gas delivered at a ten ounce pressure and gas delivered at a two ounce pressure. Eliminating the question of temperature, that would be a question of three and one-third, wouldn't it, if delivered at the lower pressure as compared with the higher pressure?

"A. No, if delivered at this lower pressure there would be actually more gas to be metered in the meters of the consumers than the gas which is metered at the higher pressure."

Now that leads to temperature and this other matter of leakage, which I do not read.

"Q. When did you make this examination of the gas holder, Professor?

"A. Last Saturday afternoon.

"Q. Who, if anybody, was with you?

"A. Mr. Camper.

"Q. You examined, of course, just the outside of the holder?

"A. Yes, sir, just the outside of the holder.

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[fol. 829] "Q. Now, all of your estimates as to probable life and all of your conclusions concerning which you have testified were made upon the theory that this was a steel holder, were they?

"A. No, not at all.

"Q. Well, you called it a steel holder?

"A. I beg pardon.

"Q. You called it a steel holder?

"A. Well, suppose we call it an iron holder. I did not use the word "steel" as anything to distinguish it from wrought iron or anything like that; merely a metallic holder made of iron.

"Q. Would your conclusions as to a steel holder and an iron holder be different?

"A. Not a bit.

"Q. You think one has the same life as the other?

"A. No, that is not the proper inference on what I said. I am judging merely how much corrosion has taken place in the last twenty years.

"Q. I know, but doesn't expectancy of life have something to do with the material out of which it is made?

"A. It wouldn't make a bit of difference so far as such an estimate is concerned.

"Q. I beg pardon.

"A. It would not make a bit of difference as far as my estimate is concerned.

"Q. Well, what as a matter of fact do you think that holder is made out of?

"A. It is probably made out of steel sheets.

"Q. And if it were of some other material, your conclusions would be affected?

"A. Not at all.

"Mr. Williams: I think that is all."

And the further redirect and recross and re-redirect do not relate so far as I can see to the holder. Now Pro-

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[fol. 830] fessor, have you any comment on that?

A. Were you reading from the 1919 case?

Q. I was reading from the 1919 case.

A. In the 1925 hearing before the Commission I pointed out that the statements you have just read were made on the basis of the assumption that the holder would continue to be managed as it was managed, that the painting would be inadequate and all that. However, if you take any holder or any structure such as that and allow it to stand with not very careful upkeep, when it corrodes to the point where it is leaking, of course, it has reached the end of its life. And my estimate as given there in 1919 was on that basis. But if you take the same holder and with an occasional

corrosion pit having corroded to the point where leakage has taken place, but 99 per cent. or 95 per cent. or whatever you please of the steel being uncorroded, without corrosion pits, if those corrosion pits are repaired or welded, which is a simple thing to do, then the holder is brought within not a great many per cent. of its original condition, its new condition, and when on the stand in 1919 I could not assume that the holder could be treated as it was treated at that time.

Now the same thing has been true of the underground pipes. I have treated the company just as severely in its underground pipes in the present report as I did the holder in 1919. I have figured the life of the pipe on the basis of the rate of corrosion of the pits, not on the basis of the rate of general rusting. And when the pits get to the point where they are through then the pipe is done, unless those pits are so few in number that it is practicable to weld them

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[fol. 831] shut from an operating point of view. The pipe is otherwise sound or the holder is otherwise sound, but it has a corrosion pit or some small number of corrosion pits in it, which are repaired, it is then within a few per cent. as good as it was when it was new. And the present condition of the holder is the condition which it has as a result of all of these corrosion factors, plus the nature of the upkeep. I think I explained it all in the testimony in 1925.

Q. That may be, but that is not before the Commission. If you have any further explanation we would be glad to have it. If there is anything in your 1925 testimony that you want this Commission to know, why, you should re-state it now. Professor, I am not asking you to. I am only putting the whole matter up to you.

A. I think I have stated in outline the situation, and any additional explanation would not add anything now.

By Chairman Geiger:

Q. Well, Professor, do you know from your observation or information whether any of the plates concerning which you have testified in 1919 have since been replaced by removal and subsequent installation of new sheets?

A. I don't believe there have been any whole sheets replaced. There has been a considerable amount of welding done on it.

Q. You know personally that there has been welding?

A. I have seen it done.

Q. Now, that welding is done by adding metal under an acetylene torch to the pit?

A. Acetylene or electric torch.

Q. It is not simply fusing the opening, but it is adding to metal to fill the hole?

A. That is true. It is adding metal to fill the hole.

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[fol. 832] By Mr. Butler:

Q. When was that done, Professor?

A. Oh, I don't know when it was all done. I saw it taking place this fall.

Q. This fall?

A. I saw some of the welding going on this fall. I don't know whether it had been going on the previous year or not.

Q. Was that before you examined it?

A. Yes, it was most of it before I examined it. Some of it was going on at the time I examined it. I know it was going on after then, that is, after this time——

Q. Gee whiz, you must have seen some pits then, didn't you? I thought you said the paint covered it up, and you couldn't see them.

A. I didn't see them. I didn't go up and stand near where the welder was working. I was perhaps so far from the welder as from here to the wall.

Q. How many of those were they fusing shut?

Mr. Turner: I don't think he said that there was any, and he testified that there were not.

Mr. Butler: I cannot follow the learned counsel.

Mr. Turner: I cannot follow you. The Chairman specifically brought out that they were not fusing them shut, they were welding some sheets on.

Mr. Butler: Welding some sheets on?

Mr. Turner: Yes.

Mr. Butler: That is now what we are talking about.

Chairman Geiger: That is not what I understood. The question I put to the witness was whether or not they fused them by melting the adjacent iron so that the pit might be filled up — the substance already in the plate——

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[fol. 833] Chairman Geiger: Or whether they added additional metal to fill the pit I didn't have in mind that they added a plate.

The Witness: As I remember it the welding that was going on at the time I speak of was to close up the spaces between the rubbing bar and the sheet under the rubbing bar. That is a place that cannot be gotten at to paint, and in order to close up that place where paint cannot be gotten at, metal was being laid on at the time by the oxy-acetylene torch. I think it was oxy-acetylene. I don't know whether it was those pits or not.

Q. You don't know just what he was doing about the pits?

A. I know he was welding the space between the rubbing bar and the sheets for the purposes, of course, of repairing the lifts to that extent.

Q. Do you think that those pits should have been fused?

A. If they were pits which had reached the point where there was a possibility of leakage they should have been welded up.

Q. You saw them in 1919?

A. They were far from leaking in 1919.

Q. Should they have been fused in '19?

A. No, I think painting was the logical thing to do. It is cheaper.

Q. Paint covers a lot of defects, doesn't it.

A. Save the surface and you save all, they say.

Q. Well, just assume when Mr. Strickler comes on the stand he will tell you that he personally looked after the painting of that and kept it painted well, what would you say then about that pitting that you discovered in '19?

A. Well, of course, that would not change the fact that

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[fol. 834] I saw pitting there.

Q. No, but what about the cause and effect? As I understand, if it had been kept decently painted there never would have been any pits.

A. I think you used the word "decently" and I did not. But it is true that at the time I examined the holder in 1919, it was pretty badly in need of paint.

Q. But, Professor, you said in your testimony in '19 that these very pits that you examined had been painted over a couple of times and you took your knife——

A. Well, suppose I did. What is the question?

Q. Well, if you cannot see any, Professor, I will pass on.

Chairman Geiger: Now, let me ask one question, Professor.

Mr. Butler: Yes.

By Chairman Geiger:

Q. Assuming there were pits in a pipe underground, would you recommend that the proper way of preventing their further development or properly remedying the defect to whatever extent it existed would be by painting or putting some substance on that would cover the surface that was exposed?

A. No, I don't think that that would be the proper thing unless it might happen that for some reason or other a whole trench had been opened. If a whole trench had been opened it might be proper to paint it or to cover it with an asphalt of some kind, but I certainly would not open the trench for the purpose.

By Mr. Butler:

Q. Is the holder any better now than it was in '19?

A. No, I wouldn't say it is. It is in better condition of upkeep that it was when I saw it. I might possibly be 649

[fol. 835] that the welding which has been done has bettered it. It certainly has bettered it under the rubbing bar region.

Q. That is all the welding that you know about?

A. That is all that I have seen done, yes, sir.

Q. As far as you know then the thing that you talked about in '19, the pitting has not been cured by fusing?

A. I am not real sure what you mean by the work "pitting."

Q. What?

A. I am not real sure what you mean by the word "pitting."

Q. I mean exactly what you meant in '19, no more and no less.

A. Well, I must be sure that you do.

Q. For instance, in answer to a question in 1918, "The sheets, especially the one-eighth inch sheets, I examined

and found that in innumerable places the steel was pitted to an extent as much as one-sixteenth of inch deep."

A. Yes, that is correct. You are using a word "pitting." Are you using it as a continuing process or as describing pits?

Q. Just exactly as you used it there.

A. Will you read me Mr. Butler's question a moment ago?

(Question read as follows: "As far as you know then the thing that you talked about in '19, the pitting, has not been cured by fusing")

The pits have not been cured by this fusion, unless they have been welded, which I cannot testify to. The pitting, however, by that term defining a process——

Q. The active process you mean by that?

A. Yes.

Q. I see.

A. Is stopped by anything that fills up the pits with a substance which prevents the access of moisture and oxygen. One might rub lead into them for instance. That

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[fol. 836] stops the continuation of the process which is causing the pits to form.

Q. But, Professor, in '19 you had to take your knife and move the paint to find those pittings, and yet you did not say what you are saying now. You seemed to attach very considerable importance to them when you found them.

A. That is very true, and you apparently are not getting what I meant by what I said. I said that, assuming that the upkeep of the holder would continue in the future as it has been in the past, that the holder had depreicated to a certain extent. Now, if you stop that depreciation by further upkeep, and then if you go further and remove the effects of the corrosion by filling them up by welding or anything like that, you will bring the holder back to a better condition than it was in '19. I do not know to what extent that has been done. I do know——

By Chairman Geiger:

Q. Let me ask this question in simple form. You testified in 1919 that it was two-fifths of its life?

A. Yes, testified that the pits in the sheets were two-fifths of the way through the sheets.

Q. But you testified as to the entire structure that it had used two-fifths of its entire life?

A. Yes, but now that is on the basis——

Q. What a minute now please; that the paint of the substance that was used to fuse in the new metal would change that per cent and arrest it at that point; in other words, it if was 60 per cent. in 1919, and afterwards was painted, would it make it a higher proportion by painting or would it require new metal?

A. Suppose the holder were 25 years old in 1919—I don't

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[fol. 837] know how old it was—and suppose it had pitted about two-fifths of its depth; and suppose it was going to continue at the same rate because of the upkeep and that sort of thing, then the estimate of two-fifths of its life was correct. But, now suppose that this holder is kept in a good condition *fo* repair, so that it is held right at that same condition, that it was in 1918, then it might last for another hundred years, say.

Q. It would *be* no longer be depreciated two-fifths?

A. It would *be* no longer be depreciated two-fifths of its life. Now, that just follows mechanically.

Q. It has started depreciation caused by certain deterioration and has reached a per cent. condition of say sixty per cent, and that depreciation is arrested at that point, so that it does not continue any further, but not improved, but just simply stops there, then the per cent condition would increase and it might get up to 80 per cent. depreciation by just simply arresting the then existing deterioration?

A. If by condition you are referring to its life, for instance, this——

Chairman Geiger: I see what you have. You need not explain further.

By Mr. Butler:

Q. Professor, in 1919 I think you were sworn to tell the truth and the whole truth. Now, if the things you discovered in 1919 could be so easily and effectively arrested by a coating of paint, why in the name of common sense didn't you in all fairness tell the Commission that?

A. It was the counsel's duty to ask me questions.

Q. Oh, I see.

A. I could not anticipate everything that might be

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[fol. 838] wanted. That is your position as a lawyer——

Q. How?

A. That is the business of counsel, to bring out such facts as the court wants to know. I cannot guess at all the things the court wants to know.

Q. It is the business of the witness——

A. No, it is not the business of the witness. The witness cannot know all that is wanted. It is up to some official of the court to tell the witness what the court wants to know. I might sit here for the next ten years and talk and tell a lot of things that might not be germane to the subject. It is not the witness' business to anticipate everything that might be wanted to know.

Chairman Geiger: That rather relieves me of some criticism I have been having in asking too many questions.

The Witness: I think you are absolutely correct. I want to say it is a great comfort to me to have you ask questions.

Mr. Butler: And for me, too.

Mr. Turner: I will second the motion.

Q. Now, we turn to another subject. You yesterday referred to that August number 1929 of the Journal of Research, Bureau of Standards. That report was by K. H. Logan.

A. It was by Logan. I don't remember his initials.

Q. Doesn't that report of its fact show that these studies are merely in process and are by no means completed?

A. They have 15,000 tests buried in the ground and have taken up and examined two-thirds of them, and it has been going on for quite a few years. The study is not complete, probably won't be complete for another twenty-five years.

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[fol. 839] That is the reason why these old life tables have been used, because I remember looking up the origin of them once. It was purely a casual origin, a guess made by a man, an engineer, for a purpose, which I don't remember, and that guess has been taken over and more or less amplified and discussed, and life tables still based on that old case, and made because there wasn't data. And

since then there has been an accumulation of data. And I have reported in this case a report of fact data about this pipe, trying to get as far away from guesses as possible.

Q. But this study will not be completed for 25 years, you say?

A. I imagine it will not be completed for 25 years.

Q. I wonder if you noticed this from page 279, the first complete paragraph? Let me read it. "When the rates of corrosion of the specimens have been more definitely established by the examination of more specimens, these tables may be very helpful in the study of the relation of the chemical nature of the soil to corrosion. At the present time such a relation is not well established."

A. Yes, but if you will——

Q. Let me finish and then I will give you all of the time——

A. All right.

Q. "It is not to be expected that a knowledge of the constituents of the soil will in itself make possible a prediction as to the rate of corrosion, since the supply of oxygen and water may be factors. The amounts of oxygen and water reaching the specimens depend upon the position of the trench in which specimens are buried, the type of soil and the amount and distribution of rainfall?"

A. Everything that is said in that paragraph is correct. The tables that are referred to there, though, are not tables

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[fol. 840] of the United States Bureau of Standards. They are not results obtained by the United States Bureau of Standards. They are merely quoting the table of a firm of engineers whose name I cannot recall now, but whose name has gone in that report. Those are not United States Bureau of Standards results though. Everybody knows that the amount of corrosion depends on water and oxygen. That is just a re-statement of it. Among other things, it depends on water and oxygen.

Q. Do these engineers of whom you are speaking happen to be utility engineers?

A. I don't know.

Q. It would be rather interesting to find out?

A. I think it states in that bulletin.

Q. All right, we will look it up.

Mr. Turner: Let's put the bulletin in evidence.

Mr. Butler: Oh, no, you surely do not want to encumber the record.

Mr. Turner: No, I do not want to encumber the record.

Mr. Butler: Well, I had not asked for it.

Mr. Turner: Well, I thought inasmuch as you wanted a part of it, we would put it all in.

Mr. Davies: You wanted part of it yesterday.

By Mr. Butler:

Q. At the bottom of page 292, let me read: "However planned, laboratory or field experiments seldom if ever, completely duplicate active operating conditions. For this reason the cooperation of a number of gas companies in the State of Ohio to determine the condition of their cast iron pipe lines was secured. The purposes of the undertaking are to determine the amount of corrosion on lines

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[fol. 841] passing through a few of the soils in which the Bureau's specimens were buried and to make a comparison between the corrosion in these lines and that of the specimens. Attempts to find suitable places for this comparison made it inevitable that a large portion of the gas mains in city streets pass through earth which has been so modified by city conditions, such as grading, filling and artificial drainage, that it does not fit into the recognized soil classifications, and the data on such soils are not entirely suitable for comparison with those of the selected soils in which the field specimens were buried."

A. That is perfectly true, Mr. Butler, and we do not use any soil classification in our results. We actually took soil samples and determined their nature, paying no attention to any system of soil classification.

Q. The thought naturally arises when one reads these and hears you confirm them just why you seemed to depend upon that bulletin?

A. I am reporting different things from what you are reporting. That is, I am reporting absolutely confirmatory evidence that it is a fact that the rate of corrosion decreases with time. The rate of corrosion is not a straight line function any time.

Q. Is that what you make out of this report?

A. That is what I made out of it. That is what I put in my quotations for.

By Chairman Geiger:

Q. Did you arrive at that conclusion from your independent observation before you read it in this bulletin?

A. Yes, sir.

Q. Or did this bulletin convert you, which way?

A. No, I reported the same thing.

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[fol. 842] Q. Where did you make such a report?

A. I reported that in 1925 before the Commission, that the corrosion which pipe undergoes in soil is self-healing by building up a scale on it, the scale inhibiting or retarding the rate of corrosion.

Q. You testified to that in 1925 and the bulletin came out in 1929 or 1930?

A. That is right.

Chairman Geiger: All right.

The Witness: I have wondered several times if they did not have the records of this Commission in 1925.

Mr. Butler: Let's write them and find out.

Q. Professor, do I understand you to say that an alkaline solution may not be an electrolyte?

A. No, sir, you did not understand me to say that or I did not say it.

Q. What is the truth about it?

A. Oh, it is an electrolyte. All alkalines, all acids, all neutral salts are electrolytes. Anything which you add to water which makes it an electric conductor is an electrolyte, pure water being a non-conductor.

By Chairman Geiger:

Doctor, is it true that the electric current is generated by having two metals of different compositions that are connected in some way through moisture in soil or the acidity or something of the sort? A. That is absolutely correct. It becomes a galvanic cell.

Q. Assuming that you have an iron pipe with a lead sealing of the joint, would that establish electrolysis between those two metals?

A. That would be a galvanic couple and would be a place where electrolysis should go on faster than a place further on out the pipe.

Q. Do you know whether the joints in those pipes are
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[fol. 843] lead joints?

A. Only in cast iron mains.

Q. In the steel mains it is a screw joint?

A. They never lead joint any steel mains. I would add that the cast iron mains in this town are in extraordinarily good condition, practically as good as new.

Q. Why extraordinary?

A. Well, here are cast iron mains that have been in the ground for thirty or forty years whose depreciation cannot be at a higher rate than two to four per cent; or something like that.

Q. You didn't find any of them pitted, did you?

A. I didn't find any of them pitted worse than two to four per cent.

Q. A little paint would make them as good as new?

A. In all of my examinations I took my file and removed the paint until it was down to the bright metal. In every case.

Q. What kind of pitting would bring you a two per cent depreciation?

A. It is hard to tell when you look at a cast iron pipe, scrape it and measure it, whether the irregularities on the surface are really due to corrosion or are due to the irregularities of the sand mold in which they are cast. I have assumed the worst and said that they were due to pitting.

By Mr. Butler:

Q. But what kind of a pitting would be only two per cent? What kind of a pipe with any pitting?

A. If you have a pipe that is a half an inch thick, which is a common thickness for cast iron pipe, and you have a pit one one-hundredth of an inch deep, that would be a two per cent pit. If it were one-fiftieth of an inch deep, that would be four per cent. That is exactly on what I base my conclusion.

By Chairman Geiger:

Q. Professor, may I just ask you a question? Isn't it
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[fol. 844] a fact that all cast iron pipe that were put down had been dipped in asphaltus before it was put down or laid in the ground?

A. It is quite common.

Q. What would you say if those that you examined were in that condition when they were put in the ground, they had been painted with some sort of protective paint or asphaltum? Now, you said awhile ago you had to take a file and clean-off the paint?

A. I believe that in most cases there was some evidence of that asphaltum present. Asphaltum disappears and goes to pieces. After it has been in the ground a good many years it is pretty hard to discover that asphaltum.

Q. I was going to ask you about that. If that is your statement, it is cleared up. What I was going to ask you about was this. You said you gave the Company not the benefit of the doubt but the city the benefit of the doubt where there was a condition in surface that might be due in pitting or due to the irregularity of sand mold. Now, assuming that that pipe was painted with asphaltum before it went in the ground, there could be no pitting until the asphaltum was worn through so as to expose it?

A. That is correct.

Q. So that if you found the condition of the pipe that was painted to be that, you would know it was not pitted, because the paint would have to be off to be pitted?

A. That is true to this extent. After paint or asphaltum has degraded to the point where it has become a sort of a mushy paste, it then isn't very much of a protection.

By Mr. Butler:

Q. In all your samples did you take the age of the pipe in the ground?

A. No, I usually inquired about the age, but that entered

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[fol. 845] into my calculations in no way whatever.

Q. Why did you inquire?

A. Because I have a lot of curiosity to know how these pipes last, and when I see a pipe in excellent condition, I will want to know whether that pipe is in that excellent condition, because it is a new pipe or because it is an old pipe.

Q. Professor, in 1925, in discussing depreciation, you spoke of a correcting factor, and indicated a correcting factor of .75 or .50. What did you mean by that correcting factor?

A. I don't remember. I would have to see the record.

Q. You don't use any such term now?

A. I may have used the same thing without using the term.

Q. Let me see that record. Maybe I can find it. Page 1871. I will not ask you to read this except to yourself. I haven't objection to reading it, but I think if you will read it there you will see what I mean.

Mr. Davies: Also on page 1874.

Mr. Butler: He says it is also on page 1874, Professor.

Q. Now, what did you mean by that phrase at that time or what do you mean by it now?

A. The correcting factor results from this sort of consideration. If you have a pipe that has one pit in it, that is 25 per cent through the pipe, then you say that pipe is 25 per cent depreciated, assuming that to start with. If you have another pipe that has a lot of pits 25 per cent through, it is obvious that second pipe is in worse condition than the first pipe, and yet it is pitted to the same depth. Now, the correction factor is a factor to make up for that difference. It is an estimated factor. In the last 36 samples which I reported in this case this fall, I did not use

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[fol. 846] the correction factor, because the pipes that I found were so few of them badly corroded that I just took the straight depreciation which is again against the company rather than for it.

Q. At what point of depreciation would you begin to use the correction factor?

A. That is an estimate of judgment. The point is that in any pipe or in any soil there may be and there are likely to be accidental conditions that determine corrosion at some one point. Perhaps a pipe might have a segregation of manganese sulphide, resulting from the nature of segregation when the steel is cast in ingot form. Now, if there was one such accidental place in the pipe where it corrodes, that is one thing. If the pipe was uniformly bad from that cause, that is another thing. Or the soil might be of the

ordinary type of alkaline clay, such as we have here, but it might have some cinders in it, and a piece of cinder against a pipe is an accelerator of corrosion, and there would be a place to make corrosion. Now, if the cinder were in such large amounts that the pipe had corroded quite uniformly, I think it is pretty obvious that that pipe which is uniformly corroded with pits .25 of an inch deep is in worse condition than a pipe with only one or two of those accidental pits. And so logically one should use some kind of a factor to show the difference between a pipe which has the accidental occasional corrosion pit and the pipe that has a lot of corrosion pits of the same depth.

Q. Well, Professor, isn't that factor in the final analysis the judgment of some learned and experienced inspector?

A. That factor is a matter of judgment.

Q. And in the final analysis isn't that really your method

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[fol. 847] of depreciation?

A. No, because I used that correction factor in only a few cases, so that in general the—I better put it this way: in general my fundamental basis of depreciation is the depth of the pit. Now, that is the basis. Then in addition to that is this correction factor which I have just mentioned, which applied when there is a large variation in the amount of the corrosion in the pipe, as I stated.

Q. In 1925 you used the correction factor in all of your depreciations, did you not?

A. Where the pipes are particularly good, yes.

Q. Did you use them——

A. I did not use the correction factor in the pipes where they were bad. That is, the correction factor would have been unity in that case. I did not use it in that way.

Q. You used a correction factor, but not that correction factor?

A. If there is no correction to make, if the pipe is uniformly bad, then we take the full depreciation of the depth of the pit. Then it is unit, and multiplying it by one does not change it.

Q. Do you understand what is meant by the quantitative method as applied to the depreciation of pipe?

A. That is the method I use, the quantitative method.

Q. Professor, if I were to find a man as able and as experienced as you, if that were possible, and I do not use

that in any offensive sense, you understand, and ask each of you to use the quantitative method upon a pitted pipe, without collaboration, is that method so well grounded and fixed that you would expect the second man to reach the same conclusion that you reached?

A. Not the same conclusion. I would expect his conclu-

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[fol. 848] sion not to be widely different. You would get a conclusion of the same order of magnitude, but not the same exact numerical figure.

Q. Why is that?

A. Because the element of judgment must enter into it.

Q. Exactly. That is what I thought. Do I understand that you believe that this general talk about deterioration of metals by crystallization is not well grounded.

A. It has been proven by numerous investigators. No metallurgist who knows metals takes any stock any longer in the depreciation of steel by crystallization. A lot of engineers do because they do not know any better. They are not up to date in the developments which have come about in research in steel. Now, I am just giving you the knowledge which is very widespread among those who are acquainted with modern research in metallurgy.

Q. You did believe in such crystallization in 1925, didn't you?

A. No, I did not. I knew it was not true.

Q. Not even in 1919?

A. Well, of course, I cannot remember sure just what I thought about that, but I am quite certain that I did not believe in the depreciation of metal by crystallization in 1919.

Q. When was this matter in your judgment finally settled along the lines that you now accept, settled in the sense that metallurgists of standing approve the conclusion generally?

A. Well, this intensive research in the internal structure of metals is a development of the last 25 years, and it has come some time during that time.

Q. Can't you get a little closer to it?

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[fol. 849] A. I can make a guess if a guess is any good in this situation. I can tell you this much, that no time since the war, or maybe I better put it the other way around, that every year since the war in my classes in ferrous metallurgy I have told the students that there is no such

thing as crystallization of metal in use as it is popularly understood, that is, small crystals growing big, because all metals are crystalline, and there is no such non-crystalline metal. That has been known for a hundred years. There is nothing new about that. That is old stuff.

Q. The supposed defect arises from large crystallization that was there originally?

A. That is right.

Q. Is that a condition that is often found in metals?

A. Oh, that is very common. Every metal, as it is originally made, is so grossly crystalline that it is practically useless for any purpose. It must be grain refined. That is, part of the function of the whole process of heat treatment, is to grain refine the metal. Some metals can be more finely grain refined than others. One of the chief reasons for putting vanadium in steel is to make it a fine grain steel. That is one reason why nickel is used.

Q. That adds to its strength?

A. That adds to its strength largely by making it a finer grain metal.

Q. Do they now, or have they been producing pipe such as are used here in this system free from the large crystallization?

A. You will have to define what you mean by large crystallization. Pipe ordinarily are not subjected to what we call ordinarily heat treatment, and they are grossly crystalline material. By crystallization I am comparing the pipe

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[fol. 850] with the structure of an automobile spring, for instance, or some steel which has been deliberately and carefully made fine grained. All pipe is grossly crystalline. The size of the original crystall in the ingot is broken down as the ingot is rolled to billet and the billet rolled to skelp, and the skelp rolled to pipe, the grain size is broken down mechanically, but the pipe is finished quite hot, and the grain is a function of the temperature at which the pipe is finished. Take a fine grain automobile steel spring, for instance, and heat it up to 1,400 degrees centigrade, it becomes coarse grain again.

Q. Of course, I assume, Professor, that these things are all relative, and what I am trying to elicit from you in my foolish way is whether relatively those things that I call defects for want of a better name arising from too large

crystallization do appear in gas pipes and mains?

A. I do not see how the grain size is going to have any connection with the condition of a pipe as it is placed underground in the soil, not subjected to violent alternations of stress.

Q. So whether we accept the old theory or what you call the present accepted theory, that situation would not develop in pi-es, or, if it did, so rarely that it could be ignored entirely?

A. That is correct.

Q. Yes, now, shall I understand you to say almost the same thing in respect to the so-called fatigue of metals as applied to gas pipes?

A. I will certainly say that there is no such thing as fatigue of metals in the gas pipes in the Columbus mains, for instance.

Q. I assume that you would have gotten the same result from your soils if you had taken a measured portion from

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[fol. 851] each of the samples and mixed them together and analyzed them.

A. If I had taken equal proportions of soil*d* from each one of those 65 samples testified to in 1925 and mixed them together, the result would have been the average of the results as reported.

Q. Professor, in your samples of pipes, please tell me how many there were that had been laid since 1925, since you testified in the Federal Court?

A. I cannot answer that question. I might be able to figure it off of my notes, here, but I doubt it.

Q. Just jot that down on a piece of paper. I shall not hold you, because I shall want you again for another matter. Just make a note of it.

A. Let me be sure about that question. You want to know of the samples which I——

Q. Yes, give me the age of all samples of all pipes that have been laid since you testified in the Federal Court?

A. Of course, the age I have to get from the gas Company. I have no way of——

Q. I thought you inquired about that.

A. I have a record of ages here, but those are the records which I got from the gas company.

Q. Oh, that is all right. Surely. That is the only way you could find it out.

A. You are referring to the samples taken this fall?

Q. Yes. They say that there have been many miles of pipe mains laid the last three years. That was not a factor that interested you?

A. No. It was in this way. I rather felt that the samples that we were taking were rather too large a proportion of them the old pipes rather than the new pipes, but we did

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[fol. 852] not have time to take more samples, and that is where we quit.

Q. Now, if you felt that way and feel that way, just give us the age of all of your samples. That will be the better way to get that?

A. You mean just tabulate them?

Q. Just tabulate them. That will be the better way, and then we can determine that simply by inspecting your tabulation. I leave you with that. You know I asked you the question last light, which I hope you will answer when you return. You have not given me your depreciation of the holder, have you, the present depreciation?

A. Would like to have that.

A. You mean you want me to go and examine it?

Q. No, from the investigations that you have made.

A. You see I have not examined the holder for the purpose of determining its present depreciation.

Q. Oh, you would have to make a more complete examination?

A. I would have to go and dig around and get the pits and all that.

Q. I see. Well, now, that is interesting.

A. You see I have made no report at all about the percentage of its present conditions. You asked me to, and I made a guess at it yesterday. That is purely a guess.

Q. I do not remember that. Maybe you are right, Professor. I was so fussed up that I didn't know it. Your investigation further would not enable you really to give us an opinion of hat.

A. I don't really remember what I went over there for.

Q. Just happened there? Well, all right. Now, Professor, when you return, if I can find the wood pile where

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[fol. 853] the company holds its samples, I may bring a sample or two in, because I may want you ti illustrate right here your method, your quanti-ative method and your factor of correction, if you used that.

Mr. Turner: Shall he bring his micrometer? Shall he bring all of the instruments and one thing and another down here?

Mr. Butler: Well, Mr. Elmes did. He had been all. I thought you had discarded a few of them. But that is up to the Professor.

Mr. Turner: I have not discarded any of them. I never had any.

Mr. Butler: It looked like a surgeon's shop when they were here. Well, Professor, that is all then for the time being until I recall you briefly.

Mr. Turner: Just for fear you won't recall him I want to ask one question that I would have asked on redirect examination.

By Mr. Turner:

Q. After hearing your testimony of 1919 read to you, have you any correction to make of the testimony that you gave in chief here in this case?

A. Not a bit. Not a bit.

Q. Was the testimony as to the present condition of the distribution system of the Columbus Gas & Fuel Company given by you as the result of your examination based upon your experience and training, and to the best of your knowledge and ability?

A. That is absolutely correct.

[fol. 854] Mr. STRICKLER testified as follows:

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[fol. 855] Direct examination:

Q. Are you familiar with what is known as Exhibit 2 in this case, company's Exhibit 2?

A. Fairly familiar with it, I think.

Q. Are you familiar with the costs of construction of such a property as that of The Columbus Gas & Fuel Company as of December 31st, 1929?

A. Fairly familiar, I think.

Q. Does that Exhibit No. 2, company's Exhibit No. 2, correctly state the cost of reproduction new of The Columbus Gas & Fuel Company as of December 31, 1929, that is used and useful property?

A. I think so.

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[fol. 856] Q. The question comes up in a case like this of the propriety of using an estimate for errors and omissions, and I would like to have you tell the Commission your experience in respect of errors and omissions; in other words, whether or not the plans as made ever come out just exactly that way, or whether or not there are contingencies that are met with that are not foreseen, whether or not all of the material is counted? I do not mean to say that you may not have the classification there, but the numbers in it.

A. In 1914 or '15—no, 1905, when I was made Superintendent of The Columbus Gas & Fuel Company, there were no records upon which we could base any calculation as to

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[fol. 857] the property of the Columbus Gas & Fuel Company. Mr. H. N. P. Dole was engineer at that time, and through my instructions he compiled the plant system account, the materials in it by street measurements and observations above ground, that being the basis for the original—or at that time for our plant account. His records were then compiled on an Atlas and from that Atlas, additions as they have been put in have been added as they were put in. It was above ground observation, and we have found a great many things underground in our excavating both for extensions and repairs of lines that were not added on that Atlas, and to my knowledge were never tied in as a plant account of the system. In addition to that there have been a great many run-arounds, as we call them, around catch basins, which had to be installed; lines running through catch basins had to be cut and run-arounds put in them. Up until the time the Columbia people took over the property, we did not record those as thoroughly as we have since that. There are unquestionably a number of those that are not considered in the appraisal as we have it here before us. In addition to that, there are, I suppose, anywhere from ten to fifteen thousand inch and a quarter, inch and a half, two inch, three inch and four inch Dayton

or dresser couplings which have been put on services and lines which were cut for extension purposes and that there is no record made of in this appraisal, that is to my knowledge.

Q. Now, you have spoken about the necessity of making run-arounds. What is your experience in making something analagous to the run-around in the downtown section

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[fol. 858] of the city where you meet with the equipment of other utilities; in other words, can you always maintain a straight line and an even depth?

A. You cannot.

Q. Just tell the Commission what happens.

A. It is necessary very frequently to offset going over or under conduits, shallow sewers, water lines, electric lines and so forth, which require fittings, or, if not fittings, during the present day we make offsets by welding them around them. But prior to the time welding came into vogue, fittings were used for that purpose.

Q. Is there any inventory of those things?

A. There is not.

Q. And is there any inventory of those instances where you departed from a straight line and made an ordinary run-around?

A. There is of late years, yes.

Q. Of late years, yes, but the earlier years?

A. No, sir.

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[fol. 859] Q. What is the fact as to whether or not the telephone lines of this city are underground?

A. They are a great many of them; electric lines, the lines leading to the street lighting systems are all underground. In fact we have had trouble keeping away from them even with the pick and shovel method—from getting into trouble.

Q. The telegraph company and the signal companies in the downtown district have their wires underground, too?

A. Yes, sir, I think they have.

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Q. The police department have their wires underground?

A. Yes, sir, that is my understanding.

Q. The Municipal Light plant has its wires underground?

A. Yes, sir.

Q. The Columbus Railway Power & Light Company has its wires underground?

A. Yes, sir.

Mr. Butler: What do you mean by "downtown". What is the area you have in mind?

Q. What is the area in which they are underground? I will ask it that way?

A. They are running clear to Alum Creek on the east and to Clintonville on the north and to the viaduct on the south of the city and clear to the extreme west side of the city in various streets and alleys.

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[fol. 860] Q. Mr. Strickler, just to save time, I am reading from your testimony, Volume 1, page 492, of the record in the Federal Court: "Since 1904 I have been the supervising engineer as to the laying of about half the lines of this system myself up until the last couple of years. There has been no regular engineering force in the employ of the company since 1904 up until about three years ago"—you were testifying in 1925—"when we employed an engineer, Mr. Harrison, whose duties were to make out scales and drawings of proposed installations, record all installations on the map and see that all lines were laid to grade, to mark out, when it is necessary, locations for extensions, and anything pertaining to an engineering supervision of the work. The approximately fifty percent of the lines constructed under my supervision since 1904 have not been constructed by contract; all of the lines which were constructed by contract were put in prior to that time, and included the original installations of the city. I do not know as to legal expenses; I can't state. I know the companies have had their own attorneys all the time."

That is a correct statement, isn't it?

Mr. Turner: Wait a minute; that is only a part of it.

The Witness: Mr. Butler, with the exception I was mistaken when I said 1904; I should have said 1906. There was

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[fol. 861] an event happened at that time which put 1904 in my mind, but 1906 should have been the year. Then another statement which I made is partially true and partially not, as I see it when you read it there. In 1914 when The Pure Oil Company purchased The Columbus Gas &

Fuel Company they made Mr. Claggett engineer of not only The Columbus Gas & Fuel Company but of The Pure Oil Company, his duties covering both The Columbus Gas & Fuel Company and the Pure Oil systems. However, Mr. Claggett did not do a great deal of engineering work in the City of Columbus, leaving it up to me to lay out the lines with his approval.

Q. Indeed he did so little that in 1925 you did not even recall that, did you?

A. You are correct.

Q. You further said this—and I think Mr. Turner wants this: "The time I took as strictly engineering work I can not tell. That was part of my work."?

A. Yes.

Q. "So far as subdividing is concerned I never did that. I gave the lines and the grades——"

Mr. Turner: What page are you reading from?

Mr. Butler: Page 493.

Q. "But a great many of the lines at that time were not laid to grade when we were installing the natural gas system.".

A. That is correct.

Mr. Turner: Now just a moment; I would like to know, for purposes of re-examination, the purpose of the question just read. If it is for the purpose of impeachment I would like to know what testimony of this witness is being impeached. If it is original testimony then I want to offer the rest of it at the proper time.

Mr. Butler: Well, Mr. Turner, it is easily answered.

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[fol. 862] All in the world I had in mind was to save time. Mr. Strickler had testified and it had been put into that record in very succinct form, and rather than spend half an hour or so, as we did in the old days, I thought I would read it to him and he would of course recognize the facts and get it in compactly. It is historical.

Mr. Turner: It is historical but is it in contradiction of anything this witness has testified to in this case?

Mr. Butler: Oh, I hardly know how to answer that. I do not think that Mr. Strickler on direct was so very clear, historically, and if we are to get the history out I thought

it rather desirable to have it put out clearly. That is the purpose of it, and if the facts are to your advantage, very well.

Mr. Turner: Oh, no; I simply want the whole story.

Chairman Geiger: Would it be fair and proper for us to state what impression it may be making on our minds?

Mr. Turner: I have no objection.

Chairman Geiger: So that you may meet it?

Mr. Turner: Yes.

Chairman Geiger: Very briefly, the thing that seems to impress us as of some importance is that here is a gentleman who has testified that since the beginning of that plant up until a date of approximately 1923 or 1924—maybe a little later—there was no need of any engineering and management outside of just those who were connected with it; and at a later date the engineering and management company comes in and is paid a pretty heavy compensation for

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[fol. 863] engineering and managing a thing that this gentleman has been managing since its inception at a probably modest salary. This is the impression that gets to us.

Mr. Turner: I see. Of course, to——

Chairman Geiger: There was no use of that while the plant was being built and he constructed a successful plant in an ordinary way, and now we are met in later dates with a high priced engineering and management corporation. We want to know what reason there was for that.

Mr. Turner: You have not noticed in the record any reason for the change in the past 26 years then?

Chairman Geiger: Well, I understand that is the objection. When was your last connection with the company, Mr. Strickler?

The Witness: February, 1930.

Mr. Turner: And the inquiry was for 1904.

Chairman Geiger: Well, he testified——

Mr. Turner: 26 years before.

Chairman Geiger: Oh, no, no; I do not understand his testimony to have stopped in 1904.

Mr. Turner: It went to 1914.

Chairman Geiger: Wasn't it in 1924—when was the Pure Oil acquisition?

The Witness: 1914, the Pure Oil purchased it.

Chairman Geiger: And for how long after 1914——

The Witness: What do you mean, Judge?

Chairman Geiger: How long did the Pure Oil continue to be owner of the company?

The Witness: Until 1926, wasn't it, Mr. Seyffert?

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[fol. 864] Mr. Seyffert: The Pure Oil sold in 1924, January 1st, 1924.

Chairman Geiger: Now, prior to the Pure Oil taking control of it there was no special engineer in building this plant?

The Witness: No, because——

Chairman Geiger: Well, when—never mind——

Mr. Turner: Now, we insist——

Chairman Geiger: Well——

Mr. Turner: Note our exception to stopping it. I want a record,——

Chairman Geiger: You may answer all that afterwards.

Mr. Turner: But I want it answered now.

Chairman Geiger: Now up until 1924 the only person that was a special engineer in connection with this was a gentleman who was also the engineer for the Pure Oil and for this company at the same time; is that what you testify to?

The Witness: That is correct.

Chairman Geiger: Now make any explanation you want to.

The Witness: I was going to say, from 1904 on there was very little pipe line constructed. During—or from 1906 rather,—during 1906, 1907, 1908, 1909, and 1910, as I remember it, there was very little pipe line installed in the city; those were years in which Columbus, as I remember it, did not grow very fast and the installations as had been installed up to that time were sufficient to take care of the then requirements. After that then considerable work was done, as I remember it.

Mr. Turner: Now may I say to the Commission that

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[fol. 865] there is no evidence here of a payment by this company for engineering. There is a contract here that there is special fees paid when engineering work is required. We are talking about managerial services in so far as the contract to which you referred in concerned.

Chairman Geiger: Over the same period there were no other managers except yourself, and those that were——

Mr. Turner: He has not so testified.

Chairman Geiger: Is that correct or not?

The Witness: Ask it again.

Chairman Geiger: Were there any other managers other than yourself as general superintendent?

The Witness: There was a general manager and myself as superintendent.

Chairman Geiger: Well, you two were able to do all the business?

The Witness: Yes, sir.

Chairman Geiger: Do you mean that this Engineering & Management Company here now occupied *add* those positions?

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[fol. 866] Mr. Turner: No. I am giving—to use your answer—the services provided in the contract.

Chairman Geiger: All right.

By Mr. Butler:

Q. Mr. Strickler, you were in reality not the superintendent of the company; you were superintendent of the distribution construction or system, weren't you?

A. I was.

Mr. Turner: And that is all.

Q. What change came in your work after the Columbia Engineering & Management Corporation began, I think in 1927, to aid or supervise?

A. I was relieved of considerable work such as meters and that class of work and confined almost exclusively to construction work, installing of mains and services in the city and vicinity of Columbus.

Q. Services and mains?

A. Yes, sir.

Q. That is really what is included under the distribution system?

A. Yes, sir.

Q. And those were all worked out for you and you simply followed instructions?

A. Yes.

Q. And plans?

A. Yes.

Chairman Geiger: Who worked them out for you; did the Engineering & Management Company work them out?

The Witness: The Engineering & Management Company.

Chairman Geiger: And that is the same class of work that up until that time you had done yourself?

The Witness: Yes, sir.

Chairman Geiger: All right.

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[fol. 867] Chairman Geiger: All right; so in your judgment there has never been any over-equipment; the matter has progressed as the requirements, due to the increasing consumption, have progressed?

The Witness: Yes, sir, I think that is correct.

Chairman Geiger: Now you were in charge of this plant as superintendent from 1899?

The Witness: No, not in charge of it; I have been with it since then but in charge of construction since 1906.

Chairman Geiger: Until what time?

The Witness: Until February 1st, 1930.

Chairman Geiger: Just about a year ago?

The Witness: Yes, sir, just about a year ago.

Chairman Geiger: Now during the time that you were in active charge of it, you and those that were connected with the local company were able to engineer and to manage the company without any outside help; you did it, didn't you?

Mr. Turner: Objection.

The Witness: Well, I don't know just what you mean by outside help?

Chairman Geiger: Well, as far as any engineering or managing problem was concerned, you attended to it here?

The Witness: Mostly, yes, sir.

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[fol. 868] Chairman Geiger: You got a fair salary; probably not as much as you thought you should have——

The Witness: I never complained of that.

Chairman Geiger: Well, that is all right; we wish it were more than it was—whatever it was.

The Witness: Thank you.

Chairman Geiger: But you never found any necessity of calling in an engineering and managing company from New York to tell you how to run your business?

The Witness: I never did.

Chairman Geiger: And that came after The Columbia Gas & Electric Corporation had control of your common stock?

The Witness: Yes, sir.

Chairman Geiger: All right.

[fol. 869] Mr. SEYFFERT testified on Redirect Examination as follows:

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[fol. 870] Redirect examination:

Q. I hand you what has been marked as Company Exhibit No. 186 and ask you if you have in that exhibit prepared for us the Judge Hough valuation plus the additions and betterments, together with the undistributed construction expenditures allowed by Judge Hough?

A. That is what the statement contains.

Q. Now, I wish you would take that and briefly explain it. I do not want it merely read, but I do want you to tell how it was done, if you please.

A. The first row of figures designated by the words "Additions by investment records" (City Exhibit 5), the total there is $1,231,760.78 as shown in City Exhibit No. 5, you see. Those are the additions to the plant made by this company between the dates of Jdge Hough's decision August 31st, 1925, and December 31, 1929, included in that total were a few items on which overheads had already been calculated. Therefore, we have deducted those respective items from the amounts so included, to find the amounts on

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[fol. 871] which overheads have not been included. That is the third line of figures. The total of it is $1,115,810.44.

Q. To those figures, we have added what Judge Hough allowed in his finding of the value of the Columbus Gas & Fuel Company, which is 10 per cent. on the rights-of-way, 10 per cent. on the land, and 17 per cent. on the other accounts. Those are extended in the column under the heading of cost new in the amounts of $3,10, $1,662.41 and $186,856.41. Those added to the actual additions in the plant make a total of $1,420,282.70. Judge Hough allowed 10 per cent. going concern value, which we add here, and I have also added

what was equivalent to 3.34 per cent. for cash working capital, which we have added, making the total with those additions, $1,609,748.41 new, and a fair value or rate base, or the amount which would be carried into a base rate, of $1,377,-958.27, which you will find in the last column. And you will also find that this amount has been depreciated by the amount which was found by Judge Hough, which was the equivalent of 16.32 per cent.

Now, the valuation as found by Judge Hough was $4,740,-285.00 for reproduction cost new; the fair value, $4,407,-481.00. Included in those figures Judge Hough allowed $80,000 for extensions and $15,127.00 for construction work in progress, which we must here deduct, because those figures would be included in addition to plant from the day of his valuation. Therefore, we carry over to the column cost new and the fair value column Judge Hough's figures less the $95,127.00. This results in a total valuation then, plus the additions as I have described, for reproduction cost new of $6,254,906.41, and the fair value or rate base of $5,354,-317.27.

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[fol. 872] Q. That we may have the computation here at this place in the record, what is the difference between that and the Welker Company valuation in Company Exhibit No. 2?

A. There was a correction applied to the valuation as put in by Mr. Welker. The original before the correction was $5,364,599.00, or approximately 10,000 difference from the figure I have read you in Exhibit No. 186.

Q. I would prefer to have the corrected figure.

A. And applying the $80,070.00 correction, brings the fair value as found by Mr. Welker as $5,284,529.00.

Q. That is on page 12 of Welker Exhibit Uo. 2 revised?

A. I haven't got it on that. I haven't got that exhibit. I am reading that from my Exhibit 10, page 5.

Q. We have the revised exhibit here?

A. Exhibit No. 2, page 12.

Q. So that the difference is about how much?

A. The difference is about $70,000.00.

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[fol. 873] Seyffert, direct.

Mr. Seyffert may take the stand:

Q. Have you prepared an exhibit showing rates necessary to be charged for natural gas in the City of Columbus by The Columbus Gas & Fuel Company in order to produce a reasonable return on its property used and useful in furnishing such service?

A. I have.

Q. I hand you what has been marked as Company Seyffert Exhibit No. 10 and ask you to state whether or not that is such exhibit?

A. It is.

Q. Referring to page 3 of your Exhibit No. 10, please explain the items included in and which make up the total of $1,276,111.14?

A. Under the head of operating expenses we have set up Purchased Gas Expense, amounting to $1,078.52, which covers the cost of operating and maintaining Gas Purchase Measuring Stations.

Distribution expense, amounting to $141,534.62, covers the cost of operating the lines, services, regulators, etc., of the company, also the maintenance of such lines, services and meters, and in general is the cost of distributing the gas to the customers. It includes labor, material, supplies and expenses.

Utilization expense, $28,865.93, is work done on customers' premises for which no charge is made. This includes adjustment of customers' appliances so as to improve the utilization of those appliances in burning gas. This account also includes labor and any material or supplies which might be used in giving the customers that service.

Commercial expense, $108,798.99, covers the cost of customers' bookkeeping, rendering bills, making collections, delivering bills, reading meters and the payment of rent,

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[fol. 874] which charges would be necessary to carry on this part of the work. This includes labor, printing stationery, supplies, addressograph work, etc., necessary to bill the customers, takes care of connections and disconnections, etc.

Business promotion expense amounts to $47,438.75. This covers labor, supplies, materials, advertising, etc., expended in the effort to increase the company's business.

General administrative expense, amounting to $86,577.73, covers salaries of general officers, the operating and engi-

neering service fee of The Columbia Engineering & Management Corporation, the salaries of general office clerks as distinguished from the clerks in office work in the commercial department, general office supplies, legal expenses and general office rent.

Other general expenses, amounting to $125,359.98, include a reserve set up for uncollectible customers' accounts, injuries and damages, insurance, employees group insurance, relief and pensions, and includes an amount for rate case expense equal to one-fifth of the total expenses paid out over the last five years.

The next item is depreciation, amounting to $177,617.36, which is at the rate of 4.0 per cent. on the depreciables contained in the valuation. Property taxes amount to $94,176.95; excise taxes $34,150.96; Public Utilities Commission tax, $1,343.63; a total of $129,671.54.

The next item, $429,167.92, is return on value of property shown in the valuation at the rate of 8 per cent. on the depreciated value of $5,364,599.00, which is the fair value shown by Welker Exhibit No. 2.

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[fol. 875] Q. Based on the amount of gas sold in Columbus in the year 1929, what does this amount to, expressed in cents per M C. F.?

A. 21.82 cents per M C. F.

Q. Proceed with the next item on page 3 of this exhibit?

A. The next item is gas purchased, being 6,255,075 M C. F. at 45 cents per thousand, which amount includes line loss, the total amount being $2,814,783.75.

Q. Expressed in cents per M C. F., what does this mean?

A. This means that the gas purchased at 45 cents per M. C. F. when line loss is considered would actually cost 48.13 cents per each 1,000 cubic feet sold. The next item is the total of the operating expenses, depreciation, taxes, return and gas purchased, and amounts to $4,090,894.89.

Q. Expressed in cents per M C. F. what does this mean?

A. This means that the total amount necessary to be received by this company would be 69.95 cents per M C. F. of gas sold.

Q. What was the amount of gas sold in Columbus in 1929?

A. The amount of gas sold for the year 1929 was 5,848,495 M C. F.

Q. What was the amount received for it?

A. The amount received was $2,861,918.33.

Q. Expressed in cents per M C. F., what does this amount to?

A. 48.93 cents per M C. F.

Q. What do the red figures at the bottom of page 3 indicate?

A. They show that if the rate of 48 cents per M C. F., with a 75 cent minimum, were received, the revenue would be less than the amount necessary to pay operating expenses, depreciation, taxes, return and gas purchased by

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[fol. 876] $1,228,976.56. Expressed in cents per M C. F., this is 21.02 cents less than should be received.

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[fol. 877] Q. Refer now to pages 23, 24 and 25, and explain what is shown on those pages.

A. Pages 23, 24 and 25 show the number of customers,

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M C. F. of gas sold, and revenue received for the entire company each month for the years 1929, 1928 and 1927.

It also shows the number of customers, the M C. F. of gas sold and the revenue received inside of the city, as well as that received outside the city.

The total customers are averaged, showing, on page 23, an average of 59,675 for the entire company, and an average of 54,744 within the city of Columbus. It also shows that there were 5,848,495 M C. F. sold within the city, and the revenue received within the city was $2,861,918.33. The percentage of revenue received in the city was 85.05 per cent and the average rate received per M C. F. was 48.93 per cent.

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[fol. 878] Q. What source of gas supply is available to the Columbus Gas & Fuel Company?

A. None except the gas owned by The Ohio Fuel Gas Company.

Q. Has The Columbus Gas & Fuel Company any gas fields?

A. No.

Q. Has The Columbus Gas & Fuel Company the means of acquiring gas fields sufficient to supply the City of Columbus?

A. It has not.

Q. From whom does The Columbus Gas & Fuel Company purchase the gas which it sells in Columbus?

A. The Ohio Fuel Gas Company.

Q. I hand you what has been marked as Company Seyffert Exhibit No. 11 and ask you to state what that is.

A. This is a copy of a contract of July 1st, 1929, between The Ohio Fuel Gas Company and The Columbus Gas & Fuel

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Company, under which gas sold by The Columbus Gas & Fuel Company in Columbus is purchased.

Q. In paragraph 10 of this contract reference is made to a contract between the Ohio Fuel Supply Company, predecessor to The Ohio Fuel Gas Company, and The Columbus Gas & Fuel Company, dated March 12, 1914. I hand you what has been marked Company Seyffert Exhibit No. 12 and ask you to state what that is?

A. This is a copy of the contract referred to in paragraph 10 of the contract of July 1, 1929, and is the contract under which The Columbus Gas & Fuel Company purchased gas for distribution in Columbus prior to July 1, 1929.

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[fol. 879] Q. Now where did The Ohio Fuel Supply Company obtain the gas which it sold to The Columbus Gas & Fuel Company in the year 1914?

A. In 1914, The Ohio Fuel Supply Company obtained practically all of the gas sold to The Columbus Gas & Fuel Company from gas fields in Knox, Fairfield, Licking and Hocking Counties, Ohio.

Mr. Turner: There is one thing I think we should do, for clearness, without passing on the admissibility of the matter at this time, and that is read this contract, or parts of it, of 1914, this Exhibit No. 12.

Chairman Geiger: Has this contract of 1914, which is not now in effect, anything to do with the present case? You state it is not in effect by Section 10 of the existing contract.

Mr. Turner: That is what I am starting to develop, and that is why I thought I needed to read to the Commission certain parts of that exhibit.

Chairman Geiger: All right.

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[fol. 880] Mr. Turner: Yes. In the first place, Paragraph 5 provides:

"This contract shall commence on the first day of April, 1914, and shall continue until the first day of April, 1924, and thereafter so long as The Ohio Company, its successors or assigns, shall be able to furnish natural gas in quantities sufficient to supply one-half of the domestic consumers of said Columbus Company, but in no event longer than twenty years, or until April 1st, 1934."

Now bear in mind that Exhibit No. 12 is executed by The Ohio Fuel Supply Company, while Exhibit No. 11 is executed by The Ohio Fuel Gas Company, another company, a successor company.

Turning for the moment to Item 6, the latter part of Item 6, after providing the price—in the first place that provided a price for ten years, and after ten years it is 65 per cent of the original price. Then it provides:

"It is mutually understood and agreed with respect to the price above stated to be charged for natural gas after the expiration of the first ten years of this contract, that the same is based upon the estimated cost to the party of the first part obtaining said gas from its present sources of supply, and that in case after the expiration of said ten year period the party of the first part finds it necessary to

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[fol. 881] resort to other sources of supply, so that its supply available for delivery hereunder is obtained by it at an increased average cost per thousand cubic feet more than a proportionate increase in the rate which said Columbus Company receives at the time for said gas supplied under this contract, then and in that event said Ohio and Columbus Companies shall endeavor to secure a rate satisfactory to both companies, and upon their failure to obtain the same the said Ohio Company shall have the right to cancel and annul this contract, to take effect twelve months from the giving of said notice."

Now, with that reading, I want to proceed with these other questions. I have already asked the question where the Ohio Fuel Supply Company obtained its supply in 1914 and the witness has replied in Knox, Licking, Fairfield and Hocking Counties.

Q. Where did The Ohio Fuel Gas Company obtain the gas which it sold to The Columbus Gas & Fuel Company in the year 1929?

A. In 1929, in addition to the Knox, Licking, Fairfield and Hocking fields, there were fields developed in Vinton, Jackson, Meigs, Athens, Washington, Morgan, Noble, Monroe, Guernsey, Perry, Holmes, Wayne, Medina, Ashland, Lorain and Cuyahoga Counties. The production in Knox, Licking, Fairfield and Hocking Counties, as well as the fields developed later than 1914, having declined, large quantities of gas for Columbus were obtained from West Virginia sources.

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[fol. 882] Q. In 1914, what part of the gas used in Columbus came from Knox, Licking, Fairfield and Hocking Counties?

A. Practically all of it. Approximately three-fourths came from the fields formerly owned by The Columbus Gas & Fuel Company and Columbus Natural Gas Company.

Q. What proportion of gas used in Columbus would these fields supply in 1929?

A. If all the gas produced from these fields were utilized for Columbus only, leaving nothing for other markets, the supply would not exceed 25 per cent of the demand.

Q. Were additional pipe lines and compressor stations necessary to make these additional sources of supply available to Columbus?

A. They were.

Q. Who installed them?

A. The Ohio Fuel Gas Company, or its predecessors.

Q. What was the reason for the change in the source of

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supply was because of the decline of the original source, it was necessary to obtain an adequate supply elsewhere.

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[fol. 883] Q. Do you know the prices being paid for natural gas by other distributing companies in or near the State of Ohio?

A. I do.

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[fol. 884] Q. Please state them, giving the name and location of the company and the prices paid.

Mr. Butler: I think, if the Commission please, we have our exception saved?

Mr. Turner: Yes, that has been noted, I think.

The Witness: These are shown on my Exhibit No. 13.

Q. Please read them, so that we will have them.

A. The Delaware Gas Company at Delaware. The rate to July 1st, 1929, is 45 cents; July 1st, 1930, 46 cents; to December 31st, 1930, 50 cents.

The City of Hamilton, sold by The Union Gas & Electric Company at Hamilton, the average rate in 1928 was 44.33 cents.

The West Ohio Gas Company, at Kenton and Lima, Ohio; the rate is 55 cents.

The City of Lancaster; the rate for the year ending June 23rd, 1930, is 45 cents; 1931 is 46 cents; 1932, 47 cents; 1933 is 48 cents; 1934 is 49 cents; 1935 is 50 cents; the year ending 1936 is 51 cents; 1937 is 52 cents; 1938 is 53 cents; 1939 is 54 cents per M C. F.

The Portsmouth Gas Company, Portsmouth, Ohio; the average rate in the year 1928 was 39 cents per thousand.

The next figures are not in the exhibit but I have ascertained that the rate in 1929 was 39 cents. The rate in 1930 and thereafter is 65 per cent of the city rate, with a minimum of 40 cents per thousand.

The Western Ohio Public Service Company, in various Ohio and Indiana towns, the rate to December 31st, 1928, is 45 cents; to December 31st, 1930, is 47½ cents; to December

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[fol. 885] 31st, 1932, is 50 cents; to December 31st, 1937, is 55 cents.

The East Ohio Gas Company, at Cleveland, Ohio; the rate is 41.8 cents per M C. F. at the Ohio River.

The Central Indiana Gas Company, various Indiana towns, the rate for the first 33⅓ million cubic feet per month is 50 cents per M C. F.; for all in excess of 33⅓ million per month, 41¼ cents per M C. F.

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Vendee	Vendor	Town
Ohio Electric Power Co.		
	The Ohio Fuel Gas Co.	Oberlin
Rate—to 12-31-30—48¢ per M Cu. Ft.		
12-31-31—49 "		
12-31-32—50 "		
12-31-33—51 "		
12-31-34—52 "		
12-31-35—53 "		
12-31-36—54 "		
12-31-37—55 "		
12-31-38—56 "		
12-31-39—57 "		
Village of Tarlton		
	The Ohio Fuel Gas Co.	Tarlton
Rate—45¢ per M Cu. Ft.		
Village of Williamsport		
	The Ohio Fuel Gas Co.	Williamsport
Rate—45¢ per M Cu. Ft.		
Auditor Gas Co.		
Northwestern Ohio Natural Gas Company		Stony Ridge
Rate—to 4- 1-29—50¢ per M Cu. Ft.		
4- 1-30—51 "		
4- 1-31—52 "		
4- 1-32—53 "		
4- 1-33—54 "		
Auditor Gas Co.		
Northwestern Ohio Natural Gas Company		Walbridge
Rate—to 9-12-28—50¢ per M Cu. Ft.		
9-12-29—51 "		
9-12-30—52 "		
9-12-31—53 "		
9-12-32—54 "		

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Ambridge Gas Co.		
	Manufacturers Light & Ht. Co.	Ambridge, Pa.
Rate—47¾¢ per M Cu. Ft.		

Vendee	Vendor	Town
Homeworth Consumers Gas Co.		
	Natural Gas Co. of West Va.	Homeworth
Rate—60¢ per M Cu. Ft.		
P-O Power Company		
	Natural Gas Co. of West Va.	Canfield
Rate—60¢ per M Cu. Ft.		
Kane Gas Company		
	Manufacturers Gas Co.	Kane, Pa.
Rate—52½¢ per M Cu. Ft.		
Greenville Gas Co.		
	United Natural Gas Co.	Greenville
Rate—48¾¢ per M Cu. Ft.		
Arlington Natural Gas Co.		
	The Ohio Fuel Gas Co.	Portage
Rate—to 8-20-30—51¢ per M Cu. Ft.		
8-20-31—52 "		
8-20-32—53 "		
8-20-33—54 "		
8-20-34—55 "		
8-20-39—60 "		
Arlington Natural Gas Co.		
	The Ohio Fuel Gas Co.	Arlington
		Mt. Blanchard
Rate—to 1- 7-30—51¢ per M Cu. Ft.		
1- 7-31—52 "		
1- 7-32—53 "		
1- 7-33—54 "		
1- 7-34—55 "		
1- 7-39—60 "		
Clintonial Fuel & Oil Co.		
	The Ohio Fuel Gas Co.	Buckeye Lake
Rate—45¢ per M Cu. Ft.		
[fol. 888]		174
Consumers Gas Co.		
	The Ohio Fuel Gas Co.	Cygnet
Rate—to 8-15-28—50¢ per M Cu. Ft.		
8-15-29—51 "		
8-15-30—52 "		
8-15-31—53 "		
8-15-32—54 "		

Vendee	Vendor	Town
Noll, Crum & Noll	The Ohio Fuel Gas Co.	Fulda

Rate—50¢ per M Cu. Ft.

John T. Feuerstein, et al. The Ohio Fuel Gas Co. Avery

Rate—to 8-11-30—$1.00 for first 500 Cu. Ft.
.60 excess of 500 Cu. Ft.
per M Cu. Ft.
8-11-32—$1.50 for first 500 Cu. Ft.
.60 excess of 500 Cu. Ft.
per M Cu. Ft.

Lakeside Gas Co. The Ohio Fuel Gas Co. Buckeye Lake

Rate—to 6-15-29—51¢ per M Cu. Ft.
6-15-30—52 "
6-15-31—53 "
6-15-32—54 "
6-15-33—55 "

Magnolia Gas Co. The Ohio Fuel Gas Co. Buckeye Lake

Rate—to 6-15-29—51¢ per M Cu. Ft.
6-15-30—52 "
6-15-31—53 "
6-15-32—54 "
6-15-33—55 "

[fol. 889] 175

Valley City Gas Service The Ohio Fuel Gas Co. Valley City

Rate—to 6-30-30—51¢ per M Cu. Ft.
6-30-31—52 "
6-30-32—53 "
6-30-33—54 "
6-30-34—56 "
6-30-39—60 "

J. A. and J. D. Poole The Ohio Fuel Gas Co. Van Buren

Rate—to 8-22-29—50¢ per M Cu. Ft.
8-22-30—51 "
8-22-31—52 "
8-22-32—53 "
8-22-33—54 "

Iroquois Gas Co. United Natural Gas Co. Buffalo, N. Y.

Rate—.50 per M Cu. Ft.
(At the New York-Penna State Line)

Andover Gas Co. United Natural Gas Co. Andover
Rate—60¢ per M Cu. Ft.

The Union Heat & Light Company, Harlansburg, Pennsylvania, 47½¢ per M. C. F.

The Johnstown Fuel Supply Company, Johnstown, Pennsylvania, a rate of 50 cents per M. C. F. made by order of The Public Service Commission of the Commonwealth of Pennsylvania.

The Union Heat & Light Company, Harlansburg, Pennsylvania, 47½¢ per M C. F.

The Johnstown Fuel Supply Company, Johnstown, Pennsylvania, a rate of 50 cents per M C. F. made by order of The Public Service Commission of the Commonwealth of Pennsylvania.

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[fol. 890] Q. Now, Mr. Seyffert, have you prepared an exhibit showing domestic and industrial rates for natural gas in effect in other cities in the State of Ohio?

A. I have.

Q. I will ask you to state the rates in effect in various communities as of February 28th, 1930.

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[fol. 891] Cincinnati.

No ordinance.

Schedule effective June 1, 1925.

First 5 M Cu. Ft.	.80 per M
Next 5 M Cu. Ft.	.75 " "
Next 5 M Cu. Ft.	.70 " "
Next 5 M Cu. Ft.	.65 " "
Next 5 M Cu. Ft.	.60 " "
All over 25 M Cu. Ft.	.55 " "

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[fol. 892] Minimum Charge .80 per Mo.
Discount .05 " M

Dayton.

Ordinance.

Schedule effective Jan. 6, 1927.

First 10 M Cu. Ft.	.70	per M net
Next 5 M. Cu. Ft.	.65	" " "
Next 5 M Cu. Ft.	.60	" " "
All over 20 M Cu. Ft.	.55	" " "
Minimum Charge	.70	" Mo. net

Akron.
Ordinance.
Schedule effective Jan. 26, 1929.
Expires November 28, 1930.

First 1 M Cu. Ft. less or none	$1.18	
Next 4 M Cu. Ft.	.58	per M
Next 5 M Cu. Ft.	.63	" "
All over 10 M Cu. Ft.	.68	" "
Discount	.03	" "

Schedule effective November 29, 1930 to November 28, 1932:

First 300 Cu. Ft. less or none	.93	
All over 300 Cu. Ft.	.63	per M

Less 3¢ discount for prompt payment.

Churches, parsonages, and charitable institutions additional 3¢ discount.

Canton.
Ordinance.
Schedule effective July 5, 1928.
Expires May 31, 1930.

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[fol. 893] First 5 M Cu. Ft.	$.58	per M
Next 5 M Cu. Ft.	.63	" "
All over 10 M Cu. Ft.	.68	" "
Service charge	.60	" "
Discount	.03	" "

From June 1st, 1930, to May 31st, 1932:

First 300 Cu. Ft. less or none	$.93	per M
No Discount.		
All over 300 Cu. Ft.	.63	" "
Discount	.03	" "

From June 1st, 1932, to May 31st, 1934:

First 300 Cu. Ft. less or none	$.93	" "
No Discount.		

All over 300 Cu. Ft.	.65 " "
Discount	.03 " "
Schools, churches, parsonages and charitable institutions	.03 " "

Canton Industrial Rate.
Schedule effective July 25, 1928.

First 5 M Cu. Ft.	$.58 per M
Next 5 M Cu. Ft.	.63 " "
Next 90 M Cu. Ft.	.68 " "
All over 100 M Cu. Ft.	.48 " "
Discount	.03 " "
Service charge	.60 " Mo.

Cleveland.
Schedule effective Sept. 27, 1928.

This schedule adopts and continues in effect the present rates for natural gas as hereinafter set forth and is to 180 [fol. 894] remain effective only so long as the East Ohio Gas Company is required by injunction to continue service in the City of Cleveland, or until other legal rates are fixed and become effective.

First 5 M Cu. Ft.	$.55 per M
Next 10 M Cu. Ft.	.60 " "
Next 10 M Cu. Ft.	.65 " "
Next 25 M Cu. Ft.	.80 " "
All over 50 M Cu. Ft.	1.05 " "
Discount	.05 " "
Service Charge	.50 " Mo.

Churches, parsonages and charitable institutions additional 2¢ discount.

Cleveland Industrial Rate.

First 5 M Cu. Ft.	$.55 per M
Next 10 M Cu. Ft.	.60 " "
Next 10 M Cu Ft.	.65 " "
Next 25 M Cu Ft.	.80 " "
Next 150 M Cu. Ft.	1.05 " "
All over 200 M Cu. Ft.	.53 " "
Discount	.05 " "
Service charge	.50 " Mo.

Springfield.
No effective ordinance.
Schedule effective January 7, 1925.
60¢ per M Cu. Ft.
Five per cent additional charge for delayed payment.

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[fol. 895] Toledo.
No ordinance.
Schedule effective March 24, 1926.

First 3 M Cu. Ft.	$.37 per M
Next 2 M Cu. Ft.	.47 " "
Next 5 M Cu. Ft.	.57 " "
Next 5 M Cu. Ft.	.67 " "
Next 5 M Cu. Ft.	.72 " "
All over 20 M Cu. Ft.	.77 " "
Discount	.02 " "
Service charge	.75 " Mo.

Six months Temporary Rate, Expiring October 24, 1930:

First 1 M Cu. Ft. (or any portion thereof)	$.75 per Mo.
Next 1 M Cu. Ft.	.60 " M
Next 3 M Cu. Ft.	.45 " "
Next 1 M Cu. Ft.	.55 " "
Next 4 M Cu. Ft.	.60 " "
Next 10 M Cu. Ft.	.65 " "
All over 20 M Cu. Ft.	.67 " "
Minimum Bill	.75 " "
Penalty	.02 " "

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[fol. 896] F. C. HAMILTON testified.

Direct:

Q. What are your gate rates in Kansas and Colorado?

A. The gate rate in Kansas is 45 cents for domestic business; the industrial business is handled in a different way; our industrial contracts out there, under orders of the Public Utilities Commission, are made with what we call a shut-off clause, which means that at any time we can

shut an industry off so as to have available for the domestic use that gas which we supply to the industries, which means that every industry which we supply must have a duplicate installation for their heating purposes, being either coal or oil, in addition to gas. That gas is not sold at a gate rate; those are contracts and agreements entered into by the distributing company with the approval of the pipe line company on competitive rates which vary all the way from 16 cents to 35 cents, and on which the distributing company gets a bare carrying charge which allows them some profit and which is a flat rate per thousand.

Q. In how many of the States do you get a city gate rate of 45 cents?

A. There are three.

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[fol. 897] Q. What three States?

A. Kansas, Missouri, Oklahoma and Colorado—there are four.

Q. In Oklahoma what is the maximum haul from your compressor station?

A. Oh, I could not give you that exactly.

Q. Approximately?

A. Well——

Q. Maybe it is a dumb question?

A. Well, let me explain it to you a little bit; there is a tremendous system criss-crossing, a net work, with gas being taken in at a hundred different points and taken out at a hundred different points. I would not, nor I don't think any one else would be able to say that this gas that came in from that well went to this distributing center over here; in other words, I could not allocate those properties and say that this gas came from there and went to there; gas is taken into the city from literally hundreds and hundreds of wells at hundreds of different points and distributed at a hundred different points. Sometimes gas is flowing through a pipe line in one direction because of an excess demand and sometimes it is going through that same pipe line in another direction to take care of a demand somewhere else. I could not give you an honest, accurate answer on that; it could not be possibly more than 250 miles.

Q. It could not possibly be more than 250 miles——

A. From gas in Oklahoma to a distributing town in Oklahoma.

Q. Judge Geiger has asked you about the Oklahoma Natural Gas Company; are you familiar with the domestic rate in Tulsa?

A. I am not. I have known it but I do not know it now.

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[fol. 898] L. A. SEYFFERT further testified.

Direct exam.:

Q. I hand you what has been marked as Company Seyfert Exhibit No. 15 and ask you to state what that is.

A. This is the balance sheet of The Columbus Gas & Fuel Company as of December 31st, 1929.

Q. Does this balance sheet include property and accounts not involved in this case?

A. Yes.

Q. State generally what property and accounts are thus

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[fol. 899] included?

A. This account includes, in addition to the property used and useful for service inside the city, property used and useful for service outside the city of Columbus. It also includes the artificial gas plant and the artificial gas mains which are not included in the valuation.

Q. Going now to the liability side, state what property of the company was originally covered by the $1,331,000.00 of bonds?

A. The artificial gas plant.

Q. What is the outstanding capital stock of the company?

A. $3,000,000.00 common, and $6,000,000.00 5% preferred.

Q. What has been the average yearly net earnings of the company as shown by the books since April 1st, 1914?

A. $262,783.95 per year.

Q. What percentage is this of the outstanding capital stock of the company?

A. 2.92 per cent.

Q. What amount was necessary to provide the fixed dividends on the preferred stock?

A. $300,000.00 per year.

Q. What was the surplus of the company as shown by the books on April 1st, 1914?

A. $666,095.55.

Q. What was the surplus shown by the books on December 31st, 1929?

A. $128,443.92.

Q. Have you prepared an exhibit showing the dividends paid by the company since April 1st, 1914, the surplus as of that date and as of December 31st, 1929, the average earnings during that period and the rate of dividends paid?

A. I have.

Q. I hand you what has been marked as Company Seyffert Exhibit No. 16 and ask you if that was prepared by you?

A. It was.

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[fol. 900] Q. Is it correct?

A. Yes sir.

Q. What was the rate of dividend paid during that period?

A. On the preferred stock the average dividend paid was 3.25 per cent; on the common stock 3.39 per cent.

Q. When was the last dividend paid by the company?

A. The last dividends were paid in the year 1924.

Q. Have you prepared an exhibit showing the income and expenses——

Chairman Geiger: What do you mean, preferred or common?

Mr. Turner: On either.

The Witness: Yes; no dividends of any kind since 1924.

Q. Have you prepared an exhibit showing the Income and Expenses of the entire Columbus Gas & Fuel Company?

A. I have.

Q. I hand you what has been marked as Company Seyffert Exhibit No. 17 and ask you if that is such an exhibit prepared by you?

A. It is.

Q. What periods does this cover?

A. The calendar years 1927, 1928 and 1929.

Q. What do these statements show?

A. They show the total revenue received by The Columbus Gas & Fuel Company in each of the years mentioned, during which time the company charged a rate of 48 cents

per thousand cubic feet with a 75 cent minimum charge within the City of Columbus, and various higher rates outside the City of Columbus.

Operating expenses include the cost of gas purchased for the entire company, which was at the rate of 65 per cent of

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[fol. 901] the sale price until July 1st, 1929, after which the price was 45 cents per thousand cubic feet.

Interest paid was on bonds and other loans.

Q. What was the net income of each of these years?

A. In 1927, net income was $85,634.88. In 1928, net income was $6,001.00. And, in 1929, there was a deficit of $154,188.07.

Q. Were any dividends paid in these years on either the preferred or common stocks?

A. No, sir.

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[fol. 902] By Mr. Turner:

Q. Mr. Seyffert, are you able to give us the average price paid by natural gas consumers in the United States during the years 1924 to 1929 inclusive?

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[fol. 903] By Mr. Turner:

Q. Now I asked you a moment ago, and I will re-state the question, are you able to give the retail price of natural gas to domestic consumers within the United States for the years 1924 to 1929 inclusive?

A. Yes, sir.

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[fol. 904] Q. Have you secured a copy of the United States Department of Commerce, Bureau of Mines, pamphlet, entitled "Natural Gas in 1928", published March 26th, 1930, by the United States Government Printing Office?

A. I have.

Mr. Turner: We ask that that be marked for identification as Company Seyffert Exhibit No. 20.

And thereupon the pamphlet last above referred to is marked for identification herein as Company Seyffert Exhibit No. 20.

Q. I hand you what has been marked as Company Seyffert Exhibit No. 20 and ask you if that is such a pamphlet?

A. It is.

Mr. Turner: We offer Company Seyffert Exhibit No. 20 in evidence.

Q. I ask you if you have secured from the Department of Commerce data under date of October 9th, 1930, on consumption of natural gas?

A. I have.

Q. I hand you what has been marked as Company Seyf-

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[fol. 905] fert Exhibit No. 21 and ask you to state whether that is such pamphlet?

A. Yes, sir.

Mr. Turner: We offer Company Seyffert Exhibit No. 21 in evidence.

COLLOQUY.

Mr. Turner: Would the Commission prefer that counsel call attention to the matters which we ask particularly to be considered, or do it through the witness? I can do it right now in a moment or two or I can do it through the witness.

Chairman Geiger: Well, I think a statement of counsel would be better as long as counsel don't testify.

Mr. Turner: Oh, no, counsel don't testify; I catch the point. We have tried it many times very unwisely.

In Company Seyffert Exhibit No. 20, on page 374, at the top, the value of natural gas at the point of consumption, in dollars, or I should say the average rate per M cubic feet, domestic, in the year 1924, was 54 cents; in 1925, was 56 cents; in 1926, was 58.4 cents; in 1927, was 60.8 cents; while in 1928, it was 62 cents;

By reference to Exhibit 21 you will find that in 1929 it was 62 cents.

Now I desire to call the attention of the Commission to the fact that in the production of natural gas five States are prominent, namely, Oklahoma, Texas, California, Louisiana and West Virginia.

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That order, as will be seen by the next exhibit, should [fol. 906] be changed so that Texas is now first and Oklahoma second and California third.

These States account for 80 per cent of the total output of the country.

Now dropping to the last paragraph on that page;

"The total estimated value at wells of the natural gas produced in 1928 amounted to $139,000,000 plus, an average of 8.9 cents per thousand cubic feet. This average compares with 8.8 cents in 1927 and 9.5 cents in 1926.

"The average prices charged for natural gas at the wells in 1928 ranged from two cents per thousand cubic feet in Utah to as high as 34.7 cents in Indiana."

I might say at this point for Utah the retail price is something over 85 cents, as shown in this pamphlet.

Commissioner Bricker: Is that the average retail price?

Mr. Turner: Yes; I will show you that later.

Now going to page 375, the last sentence there:

"Although West Virginia ranked only fifth in production it was the leading State in total value at points of consumption due to the fact that the major portion of the gas produced in the State is destined for domestic, household, consumption at a relatively high price, whereas the major portion of the gas produced in Oklahoma, for example, is used for field purposes at close to 'at-the-well' prices."

Now turning over to the next page, the table on the next page, 576, about the middle of the page, you will see the data for Ohio, the figures for Ohio; that is natural gas produced in the United States and delivered to consumers,

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[fol. 907] 1906 to 1928, in millions of cubic feet.

In 1915, Ohio had 79,510 million cubic feet delivered to domestic consumers, while in 1928 that amount had fallen to 56,341 million cubic feet; that is gas produced—I should say gas produced.

Chairman Geiger: That is not quite right. It is natural gas produced in the United States and delivered to consumers.

Mr. Turner: Yes, and delivered; well, it speaks for itself; I made a misstatement there accidentally.

Now turning to the West Virginia column, which is three columns over, we find that in 1917, I think it is, that West

Virginia reached its peak of production with 308,617 million cubic feet, while in 1928 it had fallen to 163,018 million cubic feet.

Chairman Geiger: Now, Mr. Turner, have you figures that will enable us to judge why that difference? I assume that you wish us to understand that it is only because the production has decreased——

Mr. Turner: No; I will give you all of the figures; the prices have a great deal to do with it and I can give you that right now.

Chairman Geiger: But I don't want to break in on your method of handling your case.

Mr. Turner: Well, they are all right there, Your Honor.

Chairman Geiger: All right.

Mr. Turner: They are all right there.

Now, turning to page 377, which is the next page, these 195 [fol. 908] are statistics of natural gas in the United States for 1906 to 1928.

Domestic consumption—this is the one I thought I had a moment ago—the domestic consumption in 1909 was 33 percent of the total consumption. In 1928 that was 20 percent of the total consumption; and by reference to Company Seyffert Exhibit No. 21 you will find that in 1929 it was only 19 percent of the total consumption.

Now by reference to the last column, or next to the last column, we have the total industrial consumption. Back in 1920 the total percent of consumption was 67 percent of the total; that had increased in 1928 to 80 percent of the total; and by this other exhibit, in 1929 it had increased to 81 percent of the total.

In other words, that shows that the percentage of domestic has gone down—not the absolute figures but the percentage has gone down, and the industrial has come up.

On the next page, 378, we will note in the first column, given by States, for 1927, taking Ohio, Ohio produced 3.5 percent of all of the natural gas in the United States; West Virginia produced 11.2 percent of all of the natural gas in the United States; while for 1928, Ohio produced 3.6 percent while West Virginia dropped to 10.4 percent of the total gas.

Now let us turn back to page 376, and you will find that the West Virginia production in 1927 was 162,375 million cubic feet; it did increase a little bit in 1928, to 163,018 million cubic feet.

Commissioner Bricker: Those are the same figures?

Mr. Turner: But the general course is down, if Your

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[fol. 909] Honor will watch the column there; that there is a slight increase in those two years, but——

Commissioner Bricker: And likewise in Ohio?

Mr. Turner: Yes, but the general trend is down, the curve is down, although it takes a little up-turn at that point.

Chairman Geiger: Where does it show that the general curve is down?

Mr. Turner: Well, turn to page 376, Your Honor, and go down this column of West Virginia, which starts here, at its high point in 1917, 308,617 million cubic feet,

The next year is 265,161 million cubic feet; the next year is 234,000 million cubic feet, and then it jumps up to 239,000 million cubic feet; and then jumps down to 174,000 million cubic feet, and then jumps up to 195,000 million cubic feet, and then jumps up to 203,000 million cubic feet, and then jumps down to 182,000 million cubic feet, and then down to 180,000 million cubic feet, and then 180,000 million cubic feet, and then to 162,000 million cubic feet, and then up this last year to 163,000 million cubic feet.

So I say the general course is down, and the same is true of Ohio.

Chairman Geiger: Both of these columns to which you have just referred, or tables rather than columns, were gas produced and delivered to consumers?

Mr. Turner: Yes.

Chairman Geiger: Not gas produced alone?

Mr. Turner: Gas produced and delivered to consumers. And we will show a little later the consumers.

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[fol. 910] On page 379, just above the graph—we cannot show all those at once; give us a chance to get them in one at a time.

Chairman Geiger: All right; go ahead.

Mr. Turner: I want to call attention to the statement on page 379; "Ohio continued to lead in the number of domestic consumers and was again followed by California and

Pennsylvania. Each of these three States reported an increase in 1928 in the number of domestic consumers, although in percentage of increase they were greatly exceeded by less important States through which trunk lines were laid during the year."

Now that statement, that Ohio continues to lead in domestic consumption, will be corrected in the next exhibit by showing that California has now passed Ohio.

Now turning to page 380, at the top of the page, the second paragraph there; "The average price paid for natural gas by domestic consumers continued its slow increase and amounted to 62 cents per thousand cubic feet in 1928. This price compares with 60.8 cents in 1927 and 58.4 cents in 1926. On the basis of the consumption and price data given, the natural gas bill of the average domestic consumer in 1928 was $3.80 per month as compared with $3.76 per month in 1927 and $2.83 in 1918."

Now may I call your attention to the table below, the natural gas consumed in the United States?

In 1927 you will note that Ohio had 1,149,760 consumers; now the closest to that was California, with 745,440 consumers; next came Pennsylvania, as I recall it, with 610,720.

Now in the year 1928 Ohio continued to lead, with an

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[fol. 911] increase up to 1,192,500 customers, or consumers; while California was 769,190 and Pennsylvania 615,360.

I want to call your attention to the fact that in the year 1927 Indiana only had 13,850 consumers, while in the year 1928 she jumped to 15,910.

Now I want to pass to the table on page 383, which is the industrial consumption of natural gas in 1927 and 1928. I call attention to the fact that the average price, or as they call it "value", at points of consumption, for Indiana, for the year 1927, was 48.6 cents. This is industrial gas now; that is fuel at petroleum refineries, fuel at electric public utility power plants, and other industrial.

While in that same year New York was 61.3 cents, while Ohio was 45.9 cents.

Now turning over to the next table, or page 384, which is the same sort of a table but for the year 1928, Indiana had jumped to 50.8 cents, while New York was 62.6 cents and Ohio had gone done to 44.3 cents.

Now, if I may direct the Commission's attention to the graph on page 385, the lines in the six bottom blocks on

the right hand side show, with one exception, West Virginia markets; the one exception is that Maryland is not in there, and Maryland is a part of it.

I desire to call your attention also to the statement on that page: "The movement of natural gas from West Virginia to Ohio continued to rank first in importance, although some recently established interstate deliveries, from Louisiana to Texas, for example, showed a larger

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[fol. 912] increase in 1928. The total moved from West Virginia to Ohio in 1928 was 66,319,000,000 cubic feet, 41 per cent of the total production in West Virginia, and the equivalent of 118 per cent of the output in Ohio."

In other words, we took from West Virginia 41 per cent of its entire production, and that 41 per cent of West Virginia's production was equal to 118 per cent of our own production.

Now dropping down to the table that is on that same page, The Interstate Transportation of Gas in 1927 and 1928, in thousands of cubic feet; Ohio sent to Indiana 1,348,000 and to West Virginia 1,102,000 in 1927.

In 1928 Ohio sent to Indiana 1,351,000 and to West Virginia only 636,000.

While West Virginia, in the year 1927, sent to Kentucky 8,137,000; to Maryland, 813,000; Ohio 61,974,000; and to Pennsylvania 30,360,000.

Those are all thousands of cubic feet, if Your Honors please.

In 1928 West Virginia sent to Kentucky 7,193,000; to Maryland 753,000; to Ohio 66,319,000; and to Pennsylvania 31,833,000.

Now if I may direct the attention of the Commission to the second paragraph on page 387:

"The following States led in 1928 in number of gas well completions: Texas, with 558; Ohio, with 515; Oklahoma, with 491; and West Virginia, with 404. The completions in these States comprised 72 per cent of the total for the country."

Now if I can draw attention to this Exhibit No. 21, which is the mimeograph, Your Honors; the consumption of natu-

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[fol. 913] ral gas increased 22 per cent in 1929.

Dropping down to the middle of that page, and taking the sentence, "This consumption"—which was the increased consumption—"was divided between 359,853,000,000 cubic feet, or 19 per cent, for domestic purposes, and 1,557,598,000,000 cubic feet, or 81 per cent, for all industrial purposes."

I am on the first page of Exhibit 21.

Now I want to turn to the first full paragraph on page 2 there:

"Texas, by virtue of a 54 per cent gain in output, became, for the first time, the leading natural gas producing State. This resulted primarily from a material increase in production in the Panhandle area. Oklahoma was second, with California third, but the latter State showed a greater annual increase than Oklahoma. Both Louisiana and West Virginia, which rank fourth and fifth respectively, reported increases in output in 1929."

Dropping down to the next paragraph:

"There were 5,116,000 domestic consumers on December 31, 1929, as compared with 4,344,000 at the beginning of the year. California showed a 61 per cent gain in number of consumers and displaced Ohio as the first-ranking state in this respect. A large part of the gain in consumers in California was due to the completion of the San Francisco line the latter part of the year. Nearly all of the States showed an increase in number of consumers over 1928 and no State reported a decrease. California and Ohio rank well ahead of the other States in number of consumers and their totals, 1,239,000, for California, and 1,214,000, for Ohio, respectively, are nearly double that of Pennsylvania,

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[fol. 914] the third-ranking State."

The next paragraph:

"The gas burned for domestic consumption in the United States in 1929 was valued at a total of $223,172,000.00 or an average of 62.0 cents per thousand cubic feet, the same as the average reported for 1928. This is the first time since 1908 that the average annual price has not increased over the preceding year. In only one State, Michigan, was the average value above $1.00 per thousand cubic feet in

1929. Domestic consumers in West Virginia paid the lowest price for gas—34.6 cents per thousand cubic feet."

Now if I can jump over, and the last sentence—I think it is all important, but I want to take time and call attention to these now:

"The movement of gas from West Virginia to consuming centers in Ohio continued to be the largest single item, although other interstate movements, for example, those from Texas to Oklahoma and from Louisiana to Texas, showed larger increases in 1929."

Now going to the summary of the 1929 statistics found in Exhibit No. 21, I call attention first to Ohio; its quantity consumed in millions of cubic feet was 57,936 million cubic feet. Now the estimated value at the wells of Ohio is 16.6 cents, while the average value at the point of consumption is 56.8 cents; that is divided as to domestic—the number of consumers are 1,214,000.

Now the consumption in millions of feet for Ohio for 1929 was 88,169 million feet and the average price for domestic gas in Ohio was 63.8 cents.

I want to compare that with California, which is the third

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[fol. 915] producing State in the United States and the second one in this table; they produced, as against Ohio's 57,936 million, they produced 342,214 million cubic feet. The average price at well is 8½ cents as against Ohio's 16.6. The average value at the point of consumption is 20.2 as opposed to Ohio's 56.8.

California has 1,239,000 domestic consumers, who used 43,499 million cubic feet, and paid therefor an average price of 86.9 cents.

Chairman Geiger: You are not comparing that with Ohio, are you?

Mr. Turner: Yes, I have compared them.

Chairman Geiger: You have not compared except the first two figures.

Mr. Turner: Well, that compares with the 63.8 cents which I read before.

Chairman Geiger: All right.

Mr. Turner: Now in 1929 Pennsylvania produced 101,951 million cubic feet, as against Ohio's 57,000 million

cubic feet. And the estimated average value at the wells for Pennsylvania was 27.6 cents as against Ohio's 16.6 cents.

The average value at points of consumption in Pennsylvania was 47.9 cents as against Ohio's 56.8 cents.

The number of domestic consumers was 634,000 in Pennsylvania as against 1,214,000 in Ohio.

Their customers used in Pennsylvania 53,223 million cubic feet, as against Ohio's 88,000 million cubic feet.

Pennsylvania received an average price for that domestic gas of 61.5 cents.

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[fol. 916] Morning Session, Tuesday, December 9th, 1930

And also—

L. A. SEYFFERT recalled as a witness, having been heretofore duly sworn, testified as follows:

Cross-examination.

By Mr. Butler:

Q. Mr. Seyffert, your exhibit, the Company's Exhibit 16, is a dividend statement; you have turned to that?

A. I have, yes, sir.

Q. What is the outstanding preferred stock par value?

A. $6,000,000.00.

Q. And the outstanding common stock par value?

A. $3,000,000.00.

Q. A total of $9,000,000.00?

A. Yes, sir.

Q. What is the rate base upon which you have proceeded here—the rate base?

A. Do you mean for the study——

Q. That has been calculated here?

A. In this exhibit?

Q. Yes, or in any of your exhibits here.

A. The rate base is shown on my Exhibit 10 of $5,364,599.00. That was corrected yesterday by Mr. Welker by an amount equal to $80,070.00, leaving the rate base $5,284,529.00.

Q. Does it necessarily follow that there is some water then in the $9,000,000.00 of stock?

A. I don't know whether there is water or not.

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[fol. 917] Q. Well, what do you call it?

A. I have never analyzed the difference between the capital stock and the rate base.

Mr. Turner: You understand, of course, Mr. Butler, that this is not all of the Company's property; the $5,000,000 appraisal is not all of the Company's property; we have property outside of the city; we have allocated it.

Mr. Butler: It is not what I understand.

Mr. Turner: Well, I don't want to interfere with the cross-examination, but you certainly knew that.

Mr. Butler: Well, if I knew it, then nothing is added to the record.

By Mr. Butler:

Q. You say the surplus in 1914 was $666,000.00 plus, and December 31st, 1929, $128,000.00 plus; did the difference disappear in the declaration of dividends?

A. Yes, sir.

Q. Were those dividends yearly or in large sums?

A. The preferred dividends were usually quarterly at the rate of five per cent; the common dividends were irregular—none, however, since 1924.

Q. Well, that was a very large one in 1924?

A. I don't remember just the amount of the one in 1924, but when the property was transferred from The Pure Oil Company to The Columbia Gas & Electric Company, they declared a dividend of the surplus that was there at that time.

Q. Yes, when The Pure Oil Company sold the stock in this Company to The Columbia it cleaned out practically the surplus, didn't it?

A. Yes, sir.

Mr. Turner: What do you mean by "it"? I want to get

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[fol. 918] clear there, Mr. Butler, who you mean by "it".

Mr. Butler: Well, read the question to the General.

(Question read.)

Mr. Turner: All right.

Chairman Geiger: Do you mean The Pure Oil Company cleaned it out or the Columbia?

Mr. Butler: The Pure Oil. He had already said that the Pure Oil did it.

Mr. Turner: I knew what the facts are but I wanted to know what you meant.

By Mr. Butler:

Q. What per cent dividend did the Pure Oil take?

A. I do not know.

Q. You do not know the amount even?

A. I don't remember the amount now.

Q. Don't you have your work sheets?

A. Not with me, no, sir.

Q. You better bring them. Then when the Columbia sold the stock, the Columbia took the further earnings or surplus, didn't it?

A. The Columbia held the stock for four months in the beginning of 1924. They then took the earnings of those four months in the form of a common stock dividend.

Q. To whom did the Columbia sell?

A. The Columbia sold to The Ohio Fuel Supply Company.

Q. Well, before dividends were paid I assume that the interest on the outstanding mortgage was paid regularly?

A. Yes, sir.

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[fol. 919] By Mr. Butler:

Q. I wish you would tell the Commission just how in this gate rate contract, which was the biggest thing that confronted the local company, you could both represent it as a director and represent the other company that was selling the gas to it?

A. Well, in spite of the fact that I represent both companies, I can be fair to both. This is not a matter that came up all of a sudden. It has been a matter that has been discussed with Mr. Crawford and Mr. Cross and myself many times in the last five or six years. We were

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[fol. 920] selling gas under a contract of that sort prior to the making of this contract, and the question of price and other things were thoroughly discussed and thoroughly understood before the formality of the Directors meeting.

Q. Well, yes, back in 1924, in your pleadings in the Federal Court, this Columbus Gas & Fuel Company said that

The Ohio Fuel Gas Company would withdraw, didn't it, and then insisted that it ought to have 45 cents?

A. I have seen minutes to that effect, that the Ohio Fuel intimated or said that its rate should be 45 cents, yes, sir.

Q. Did you realize that The Ohio Fuel Gas Company was a party to a contract with The Columbus Gas & Fuel Company for a supply of gas, a contract that might run until 1934?

A. Yes, sir.

Q. Did you as a director of The Ohio Fuel Gas Company tell yourself, as a director of The Columbus Gas & Fuel Company that you were going to terminate that contract?

A. Well, I did not talk to myself.

—. Well, as a director of the Fuel Gas Company did you decide that once you got the higher rate you would terminate it and cut The Columbus Gas & Fuel Company off from a supply of gas?

A. You are familiar with the contract and there are provisions in there that under certain circumstances that contract could be terminated, and those conditions were present and the contract was terminated.

Q. By The Ohio Fuel Gas Company?

A. By mutual agreement with both companies.

Q. Well, why in the world would The Columbus Gas & Fuel Company, unless pressure were put upon it, surrender

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[fol. 921] the rights under the contract that it had running to 1934, providing for a 65-35 per cent division of the receipts in the city?

A. Did it have any further rights?

Q. Well, of course, I have never been accepted as attorney for the company, and I rather assume that I am very far from that, but I think it did have some rights.

Mr. Turner: Of course, this is a legal argument between counsel and the witness.

Mr. Butler: Oh, quite so.

Q. Yes, it did have rights. The point is this—you are as familiar with the contract as I am—that it was within the power of The Ohio Fuel Gas Company to demand a higher rate or terminate its contract; yau know that?

A. Well, if it was within the power, and then the other company had no rights, it would cease to have rights.

Q. Well, I don't know; maybe you ought to consent to your own execution; but did The Ohio Fuel Gas Company tell The Columbus Gas & Fuel Company that it had to pay more or it would terminate that contract?

A. No, of course it never takes quite that form; you are familiar with rate matters that have been before the Company for a good many years; and in the contract it states that the two companies shall attempt to get an adjustment of the rate in the City of Columbus whereby the portion that The Ohio Fuel Gas Company would receive for its gas at the city gate would compensate it for its service, and when those conditions ceased, why, they had to make some other arrangements; the Ohio Fuel Gas Company, of course, expecting all along, and The Columbus Gas & Fuel also, that there would be an adjustment so that the 65 percent provision

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[fol. 922] would give The Ohio Fuel Gas Company a reasonable price for its gas. However, that was not accomplished.

Q. Well, to put it a little differently, and speaking for yourself as a director, and in a general way for your associates, you think that The Columbus Gas & Fuel Company was quite as willing as The Ohio Fuel Gas Company was to terminate that old contract?

A. Well, again you state it rather difficult—in a difficult manner to answer.

Q. Well, you state it your way; I am not trying to catch you.

A. As I told you before, the discussion has taken place as to what the right thing was and what the right price was and it was determined that that was the right price and that that was the proper procedure.

1905

[fol. 923] Q. At the time that contract was made I think you told me you were not a director of The Ohio Fuel Gas Company?

A. Are you speaking of the contract between——

Q. The 45 cent gate rate contract?

A. Well, if I told you that, that is the truth; I cannot just remember now when it occurred.

Q. But you were not a director?

A. Well, I want to refresh my memory before saying I

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[fol. 924] was not; I could look it up and find out.

Q. But you do not have any independent recollection about it?

A. No, not right this minute, no.

Q. All right. Do you remember sitting in either board of directors?

A. I think it is a matter of record here in this record who were present at the time of the meetings and I am not sure whether I was on the Board then or not, right now; I can find out.

Q. You remember of considering the 45 cent gate rate?

A. Oh, many times, yes, sir.

Q. Well, do you remember from which standpoint you considered it, The Ohio Fuel Gas Company or The Columbus Gas & Fuel Company?

A. Well, I considered it from both points of view; I knew it was necessary to have more money at the city gate to justify the operating expenses and I also knew that that meant a greater rate in the city.

Q. Well, you are just as clear that the gate way rate ought to be 61 cents plus?

A. I am just as clear that it is necessary to get 61.61 to give us a full return on the value of our property.

Chairman Geiger: Is that for a gate rate?

The Witness: That is for the gate rate, yes, sir.

Chairman Geiger: I see.

By Mr. Butler:

Q. Then if you got a proper return on your money, or, in other words, The Columbus Gas & Fuel Company paid a gate rate of 61.61, what would be the flat rate that should be paid The Columbus Gas & Fuel Company in the City of Columbus?

A. This is rather a difficult question to answer, Mr. Butler; to a person offhand; it would need in addition to the 1907 [fol. 925] 61.61 cents, the distribution costs beyond that and a return on the distribution property beyond that to give a profit in the city.

Q. May I approach it this way; with a gate rate of 45 cents, the proper local rate was 69 cents plus, with a 75 cent minimum; if the proper city rate were paid, 61.61 cents, wouldn't the proper flat rate to be paid locally be 86 cents with a minimum of 75 cents?

A. Well, if you were adding the difference between 45 and 70, which is 25 cents, to the 61.61 it would make it 86 cents, but of course you are running into competitive conditions that would have to be taken into consideration, and also you would have to take into consideration the volume of gas sold, which is quite important.

Q. Well, it might be higher then?

A. No, it would not be higher; you could not sell it.

Q. It just could not be any higher?

A. You could not sell it; there is competition on all sides.

Q. Well, I am glad we know the worst. Do you think as you get beyond 69 or 70 cents there might be competitive conditions that would forbid you increasing the rate?

A. Yes, sir. I do.

Q. What in the world are you going to do—just lose money forever? I don't understand that. If it cost 61.61 cents honestly to get gas at the city gate, how in the world are you going to fix a rate now that will ever give you a return on your money here?

A. I don't think we are.

Q. In other words, from your point of view, unless The Ohio Fuel Gas Company is willing to suffer a loss in its sales to The Columbus Gas & Fuel Company The Columbus

1908

[fol. 926] Gas & Fuel Company is doomed to continual and perpetual loss?

Mr. Turner: Objection; that is not a fair deduction from what the witness said The witness said it was necessary to get this return, if Your Honor please—to get this price to have a return; and return and a loss are two different things.

Mr. Butler: Well, now you have had the explanation, maybe you can permit the answer.

Mr. Turner: He don't need an explanation from me. I want to get the explanation to the Commission; I have had it from him before.

Mr. Butler: Well, if you and he talked it out, all right; Mr. Turner, it is difficult enough for all of us to take a hand; I don't resent your suggestion because it is very interesting.

Chairman Geiger: Mr. Seyffert, has it ever been studied out carefully so you arrived at any conclusions as to what

it costs to distribute gas to the local consumer between the gate where it is received and the burner of the consumer?

The Witness: You have that in my Exhibit No. 10.

Chairman Geiger: We have that?

The Witness: Yes, sir.

Chairman Geiger: All right.

By Mr. Butler:

Q. How much is that; put it in figures?

Chairman Geiger: Well, that is built up on establishing the price of the property, etc.?

The Witness: There are so many things that enter into a statement of what the cost of service might be; you have

1909

[fol. 927] to have the value of your property, you have to have the consumption and you have got to have the expenses, and in this case it is a little difficult because those expenses have to be allocated as between inside and outside the city; but I think you will find that pretty completely set up in Exhibit No. 10; that was the object of it, at least.

Chairman Geiger: All right.

By Mr. Butler:

Q. Can you in one figure, approximately if necessary, give me the cost per M C. F. from the city gate to the consumer?

A. On page 3 of Exhibit 10, the total cost exclusive of gas purchased was 21.82 cents per M C. F. sold, and the gas purchased at 45 cents, and allowing for leakage and unaccounted for gas, brought that figure to 48.13 or it made a total cost of 69.95 cents.

Chairman Geiger: Now, may I ask, is that figure made from the historical operation of the company or the theoretical figure that you have worked out?

The Witness: The expenses are actual expenses; the taxes and other items are actual; it represents a return of eight per cent on the property value that we have put in this case, and it also includes depreciation at the rate of two per cent on the value of the property put in this rate case.

Chairman Geiger: All right.

Mr. Butler:

Q. Mr. Seyffert, the consumers are now paying here a flat 48 cents, with a 75 cent minimum?

A. Inside the city, yes, sir.

Q. Now assume that that was raised to the point that you think the facts and the law demand, 69 cents plus flat and 75 cent minimum——

1910

[fol. 928] Chairman Geiger: You had your distribution figure at what?

The Witness: 21.82 cents, Your Honor.

Mr. Butler: Work that out, Mr. Turner; I think you will find it is a 75 cent minimum.

Mr. Turner: I have it down here but I was trying to work out something else to see if you did not have a mistake some place.

By Mr. Butler:

Q. Now assuming that that was raised to the point that you think the facts and the law demand, 69 cents plus flat and 75 cent minimum, what effect on consumption would the increase in rate have, if any?

A. Ordinarily when the price goes up to that extent at least the consumption will drop off; we believe, because of the fact that this rate has been in an unsettled state for so long, that we are not getting the consumption that we would ordinarily get at the lower rates, and consequently I do not think there will be as much difference in the amount of consumption that there might be if these rates had been firmly established for a period of time.

Q. But what estimate do you make for the reduction?

A. I haven't made any.

Q. Well, don't you think you should?

A. No, I do not.

Q. Do you mean to say to the Commission that you think that this present rate of 48 cents could be raised to 69 cents plus and not seriously and considerably menace and diminish the total present sales?

A. Yes, sir, I do.

Q. Well, when would this inability further to increase,

1911

[fol. 929] begin—immediately after 70?

A. Well, that remains to be worked out; we would have to give it a trial.

Q. But you see I am appealing to you as an expert.

A. I am not qualified as an expert.

Q. You are treasurer of The Ohio Fuel Gas Company?

A. Yes, sir.

Q. And a director?

A. Yes, sir.

Q. Now?

A. Yes, sir.

Q. Well, how can you longer, as such treasurer and as such director, justify a sale of gas to The Columbus Gas & Fuel Company at 45 cents when you say that for a proper return it should be 61.61 cents?

A. We will have to take less than it is worth; less than a complete return.

Q. Well, aren't you losing a tremendous lot of money in The Ohio Fuel Gas Company by selling all of this gas at gate rates of 45 cents when it should be 61.61 cents?

A. We are losing return.

Q. You are just losing almost all return, aren't you? At 45 cents you practically get nothing for your investment, isn't that so?

A. Are you talking about The Ohio Fuel Gas Company?

Q. Yes.

A. No, we are not losing all of the return.

Q. What part of it are you losing?

A. The eight per cent return represents 20.82 cents.

Q. And you are now losing 16 and——

Chairman Geiger: Is that 20 or 21?

The Witness: This is 20.82; this is The Ohio Fuel Gas Company; he is talking about this return of The Ohio Fuel Gas Company, and the other was the cost of distribution of 1912 [fol. 930] The Columbus Gas & Fuel Company; it is just coincident that the figures are within one cent of each other; they have no relation whatever one to the other.

By Mr. Butler:

Q. But to make a proper return on The Ohio Fuel Gas Company property in itself requires 20.82 per M. C. F.?

A. Right.

Q. Now, as a matter of fact, of that you are actually losing 16.21 cents per M. C. F.?

A. I assume that you are subtracting from the total net cost of service as shown here, 61.61 cents—I assume you are subtracting 45 cents, which we get from The Columbus Gas & Fuel Company, and in that event saying that we are losing 16.61 cents per M. C. F. of the return to which we are entitled, of 20.82.

Q. Well, is that right?

A. That is right.

Q. In other words now, putting it differently, considered from the standpoint of a proper return on your investment, every time you, The Ohio Fuel Gas Company, sells one M. C. F. to The Columbus Gas & Fuel Company, it loses 16.61 cents?

A. No, that is not quite correct.

Q. Well, how much is it?

A. It gets 16.61 cents less than enough to give it a full return of eight per cent.

Chairman Geiger: It does not lose it; it loses if you take into consideration that you are entitled to profit?

Q. Well, that was my assumption.

A. I understood you to say they lost that?

Q. No? I get your point; my question was based upon the assumption that you are to get this fair return that you have figured out on your property.

A. And if we do not get that return we get 16.61 cents less than that.

1913

[fol. 931] Q. In other words, using that as a basis, you get, on each 1000 feet that you sell here to the local company, 16.61 cents less than you ought to have?

A. That is right.

Chairman Geiger: But you still might make a little profit on it?

The Witness: Yes; if you will look at this exhibit you will see, on page 3 of Exhibit 44, the figures are all there; the total operating expenses and taxes before return are 42.26; the return is 20.82; the total of the two is 63.08 a deduction of .0147, leaving the total net cost of service 61.61; all on page 3 of Exhibit 44.

Chairman Geiger: Have you anything on that exhibit showing what you actuall- get now under the present price of 45 cents at the gate way—what your profits are?

The Witness: That is in Exhibit 43, yes, sir.

Chairman Geiger: All right; as I understand you, putting it in a way that just we people can understand, that now, paying the gateway price of 45 cents, and estimating that the distribution cost is 21.82, in order that the local company could make a proper return that it is entitled to, in order that you could distribute gas and make your proper return locally, you would have to get the gateway price down to 23.18 instead of 45 cents?

The Witness: I presume you have made the subtractions; tell me that again; have you those figures down there?

Mr. Turner: Just read the record.

The Witness: I think that is 26.18, Your Honor.

Mr. Turner: He is subtracting 21.82 from 45.

The Witness: Oh, yes—I subtracted from 48; that is

1914

[fol. 932] right; you are right about that—23.18.

Chairman Geiger: And putting it in another way, there is a margin between the gateway price and what the consumer pays of three cents, not taking into consideration the variations of the less than 500 or 1000, and there should be a variation of 21—a margin of 21.82 instead of three cents?

The Witness: Well, yes; you must take into consideration leakage also.

Chairman Geiger: Oh, yes, but leaving that our——

The Witness: Yes, sir, leaving that out, you are correct; that is also shown on page 3 of Exhibit 10.

1405

[fol. 933] Q. Suppose when you come the next time, you tell us about the Columbus group, maybe you can give us now approximately the income that this Engineering & Management Corporation receives from the Columbus Group——

A. No, I can not, I would not attempt to remember it, Mr. Butler.

Mr. Butler: Very well.

Chairman Geiger: Is the compensation paid by the producing company based also upon a per cent of the amount of gas they produce?

Mr. Turner: No.

The Witness: On gross revenue in all cases.

Chairman Geiger: On gross revenue?

The Witness: Yes, sir.

Chairman Geiger: Is it two and a half per cent, on that?

The Witness: It is two per cent on the Ohio Fuel Gas Company.

Chairman Geiger: Well, then, they get two per cent on it and tax against the producer and they get two and a half per cent on what you use in Columbus so that as to the amount used in Columbus they get five one-half per cent.

The Witness: No.

1406

[fol. 934] Chairman Geiger: They get paid for it.

The Witness: No, they get—it is based on gross in both cases, whatever the gross is of one company, if is paid on and whatever the gross on what their income is?

Chairman Geiger: Well, they paid two per cent on the producing company gross on what their income is?

The Witness: Yes.

Chairman Geiger: And then after that has been taxed or is paid—we won't say taxed—that is an offensive word—is paid—its two per cent—and getting to the gateway and is sold to the distributing company and by the distributing company to the consumer, they paid two and a half per cent again on that gross?

The Witness: That is right, the Ohio Fuel Gas Company——

Chairman Geiger: Then don't they pay five and a half per cent on all the gas that is consumed in Columbus?

Mr. Turner: Couldn't possibly—two plus two and a half could not make five and one half.

Chairman Geiger: Two plus two and a half—I beg your pardon—four and a half.

Mr. Huffman: And go back and add the United to that and you will get about five and one-half.

Chairman Geiger: Well, we want to know about that.

Mr. Butler: They pay on the United when that gas comes over into the Fuel Gas Company, they pay again, and when that gets here, they pay again, it is probably nearer seven and one-half instead of six.

Mr. Turner: Let that go.

Chairman Geiger: Well, we will have to get some light on 1407
[fol. 935] that.

Mr. Turner: Of course, they furnish service to each of the companies.

Chairman Geiger: Yes, I know, but the final drain or final charge or whatever you want to say——

Mr. Turner: There isn't any question——

Chairman Geiger: To the consumer in Columbus——

Mr. Turner: There isn't any question about that and that is the reason that I offered to bring in here the profits and let you handle them anyway you want to.

Mr. Calland: All of them.

Mr. Turner: And all of them.

Chairman Geiger: Well, now, are we agreed on what you want?

Mr. Butler: We are agreed. I have agreed about what I want.

Chairman Geiger: You have agreed with yourself.

Mr. Calland: He agrees with that.

Mr. Butler: But in all seriousness and fairness it seems to us no hardship to ask General Turner to bring a man or let a man bring the figures who can tell us about this. Why not? And we shall insist upon what to the end.

2486

[fol. 936] Mr. Newman testified on cross-examination:

Mr. Butler: It is the first page of the distribution. It is the second page of the exhibit. Administration, executive salaries, $499,158.30. What salaries are included in that, Mr. Newman?

A. That is the private executive payroll, and I never saw that, and I could not outline just who were included under that designation, but I would assume that it covers the executive officers of Columbia Engineering & Management Corporation and the executive officers of the subsidiary companies who are paid by Columbia Engineering & Management Corporation.

Q. You see I am not asking for the details of special salaries, but I do want to know with complete accuracy what is included in that. Now, are you prepared to say that that includes the salaries of the executives of the Engineering

& Management Corporation and the salaries of those executives whom that corporation sends out without cost to the company except through fees to the various subsidiaries?

A. I am not certain it includes all of them. It is possible that the accounting officers of the subsidiary companies may be charged to another account. I am not certain. It is charged to the Treasury Department expense.

Mr. Butler: You gentlemen probably have the complete
2487

[fol. 937] thing there. We are not asking you for it. We give you our word.

Mr. Turner: I thought you were asking for a list of the names, and I think he has that.

The Witness: I can give you a list of the names.

Mr. Turner: That will answer your question, I think.

The Witness: It will answer it in part anyhow.

Q. Did you make it up in an exhibit?

Mr. Turner: Just a sheet of paper.

A. I have the list of the names.

Q. Now, you are reading the men who received the executive salaries the total of which is $499,158.38?

A. No, I am reading the names of the executive payroll and the amounts paid those men are charged to different accounts. Now, just which particular account they are charged to, I cannot give it, because there are various branches. For instance, geological, auditing, tax, treasury, secretarial work, operating and so on.

Q. That is what led us to this inquiry. We saw that item. Take accounting just above that.

A. I can give you the names of the executive payroll plus the total salary paid those people in 1930.

Q. Let's see what that means.

A. P. A. Alberty, Charles E. Bennett, H. C. Blackwell, George F. Brenner, J. D. Brown, E. A. Clark, Fred W. Crawford, George W. Crawford, H. J. Crawford, Raymond Cross, J. Edward Davey, F. H. Deckman, F. E. Flahive, D. Friedenberg, B. H. Gardner, Chester J. Gerkin, P. J. Gosler, T. B. Gregory, W. N. Grinstead, Jacob Harvin, W. J. Hightower, O. E. Howland, Charles F. Huff, O. H. Hutchings, T. H. Kerr, Polk Lafoon, A. C. Moorhaus, A. J.
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[fol. 938] Newman, William W. O'Dell, H. Edwin Olson,

Howland H. Pell, Jr., L. J. Pepperburg, John G. Pugh, George W. Ratcliffe, Edward Reynolds, Jr., E. E. Roth, W P. Sadler, L. A. Seyffert, J. M. Simpson, Edward T. Steele, Frank M. Tait, H. A. Wallace, C. I. Weaver, Thomas R. Weymouth, Don Mr. Wilson, Raymond G. Winans, C. R. Bellamy, William H. Blauvelt. The last two have one half of their time classed as executive and the other half as engineering. That is a total of 48.

Q. Then the total salaries?

A. The total salaries paid, executive salaries paid, to those men are $830,035.54.

By Commissioner Geiger:

Q. Is that in addition to the $499,000.00 that you have heretofore given?

A. The $449,000.00 is included in the $830,000.00.

Q. You have read a list of 48 executives of the Engineering & Management Corporation. Isn't it true that from these men the Columbia system subsidiaries get their Presidents?

A. The Presidents are included in the list, yes.

Q. And don't they also get their chairmen of the boards?

A. The chairmen are included in this list.

Q. And don't they get their general managers?

A. The general managers are included in this list. I don't say they get them there. They are included there.

Q. Is it a difference of terminology and approach. Are all of the First Vice-Presidents included therein?

A. I think so, yes.

Q. And are not all of the Second Vice Presidents included therein?

A. They were not in 1930. I don't know whether we have any designation as first and second vice presidents. Usually a Vice President in charge of certain operations.

*2489

[fol. 939] Q. And aren't some of the Third Vice Presidents included?

A. As I stated before, I don't know of any such designation as first, second, and third.

Mr. Butler: Oh, I think surely there are.

Mr. Calland: We never heard of it.

The Witness: There may be in one or two companies; but to my knowledge not in the Columbus Group.

Mr. Turner: Tell us what company.

Mr. Butler: Oh, I don't know. You wouldn't believe me if I told you.

Mr. Turner: That might be true, but nevertheless we could demonstrate to you whether it was true or not.

Mr. Butler: I think you have the better of the argument, Mr. Newman, and I will give Mr. Turner due credit.

Mr. Turner: Don't give me any credit. It might spoil the record.

Q. But you do have Vice Presidents in most of the companies?

A. You mean in the Columbus Group?

Q. Yes, take the Columbus Gas & Fuel Company. Chairman of the Board, Crawford; President, Cross; Vice President, Gregory, Girard, Crawford, Allen, Jr.

Commissioner Geiger: They do not designate them as first, second, third and fourth. They are all equal.

Q. Did you read in that list that you have there John G. Pugh?

A. Yes, sir.

Q. And Reynolds and Harvin?

Mr. Turner: No, they are different men.

The Witness: Jacob R. Harvin and Edward Reynolds, Jr.

Q. Raymond Cross in that list?

A. He is.

2490

[fol. 940] Q. Let me ask you broadly, is there any other list of individuals who receive compensation from the treasury of the managing company other than that you have here read or just read?

A. Oh, they have other employees, yes.

Q. Any other executive officers? You spoke about a treasury list.

A. There are a number of treasurers in this list.

Q. But you spoke, I thought, as though there were another account—treasurers' account?

A. Not another list; a separate sub-account of operating expenses which is called treasury expense.

Q. What I am trying to get at, are there any other officers who are paid out of the treasury of the Management Company other than those included in the list of 48 which you have just read?

A. There are not, except such of those as are part of the engineering section, Mr. Welker, Mr. Baker and Mr. DeForest at Cincinnati.

By Mr. Butler:

Q. Now, among those 48 are the secretaries of all those subsidiaries?

A. They are.

Q. And among those 48 are found the treasurers of all of these companies?

A. They are.

Q. Probably some of the assistant secretaries, too, are there not?

A. In one or two instances, where the assistant treasurer is the chief operating accountant in the group, they are included.

Q. Is that assistant treasurer?

A. Assistant treasurer, and they may also hold the title assistant secretary, I am not sure, but I think in one or two instances they do.

Q. That is really sort of a creation for an emergency, 2491
[fol. 941] isn't it, so that they will have somebody there if the general secretary is not there?

A. That is true, yes.

Q. In other words, I am attaching no particular importance to that. That is common in corporations. Now, I have not yet had the original thing which I sought some weeks ago. I want the list of the men who receive these executive salaries under administration, $499,158.30. That is a little breakdown of what you have given, make a note of that.

By Commissioner Geiger:

Q. May I ask you this, whether or not you know whether any of these 48 that you have named received any other or additional salaries from any subsidiaries or parent organization than the salaries they are paid in this company?

A. To my knowledge they do not.

Q. You do not know that there are any in that list that are paid a salary or compensation by the Columbia Gas & Electric Corporation?

A. I don't audit that company but my understanding is that they pay no salaries, the holding company does not pay any salaries. They are all paid by the Management Corporation.

Q. Whether they be of subsidiaries or of parent organization?

A. For this specific list, yes. I might amend that. The parent corporation does have same small operations for which they do pay salaries, but no executive salaries.

Q. Would it be violating, and if it is, I do not want you to answer it, any of the arrangements that you, Mr. Newman, and Mr. Turner have had, to inquire what is the highest salary paid any one of these 48 individuals.

Mr. Turner: That goes to the heart of our agreement.

Commissioner Geiger: All right then, I withdraw the question. 2492

[fol. 942]

Mr. Turner: I can tell your Honor——

Commissioner Geiger: I do not want the individuals.

Mr. Turner: I can tell Your Honor what Mr. Butler will undoubtedly develop in the evidence, and he will bring it out as evidence, and you need not consider it until then, the total employees are 387; dividing them up, there are 176 in the engineering department, leaving in the operating department 211. There are 48 of them who are executives. That leaves employees other than engineering and executives, 163. Now the total salaries $1,669,638.21. Mr. Butler will doubtless develop that, but I was anticipating so that Your Honor will get that, $1,669,638.21.

Commissioner Geiger: Total men how many?

Mr. Turner: Total men 387; total salaries, $1,669,638.21.

Mr. Butler: How did you divide those?

Mr. Turner: Total employees, 386; employees in the engineering department 176; employees of operating department, 211; executives 48; employees other than engineering and executive, 163. Now, I have a split-up of the salaries if you want them.

Mr. Butler: Yes.

Mr. Turner: Total salaries, $1,669.638.21; engineering, $462,968.07; executive salaries, all of them, including this

four hundred some thousand, $830,035.54. Now the salaries other than executive and engineering are $376,634.60. I think you can get that as evidence by asking Mr. Newman if that is not so.

Mr. Davies: Where is your operating? You had operat-

2493

[fol. 943] ing, 211, but you did not give a sum for that.

Mr. Turner: He divides that into executives and others, don't you? I have given you all of the salaries, divided as we have them divided.

Mr. Davies: Operating and executives are $830,000.00.

Mr. Turner: No, that is executive only. You are after the figure, salaries of the operating departments, total?

Mr. Butler: Yes.

Mr. Turner: $1,206,670.14. Now, if you can get them all as testimony by asking Mr. Newman if that is correct, all right.

Commissioner Geiger: The 48 men were paid $830,000.00.

Mr. Turner: $830,035.54.

Commissioner Geiger: That is to the 48 men?

Mr. Turner: Is that correct?

The Witness: Yes, sir, that is correct.

2497

[fol. 944] Q. All right, Mr. Newman.

A. There are 14 executives whose salaries were charged to administrative expense. H. C. Blackwell, Fred W. Crawford, George W. Crawford, H. J. Crawford, Raymond Cross, F. B. Flahive, P. G. Gosler, T. B. Gregory, John G. Pugh, George W. Ratcliffe, Edward Reynolds, Jr., Frank M. Tait, H. A. Wallace, Thomas R. Weymouth.

Commissioner Geiger: Now, are those that you have just enumerated, totaling 14, in addition to the 48 who were heretofore mentioned?

The Witness: They are included in the 48.

Commissioner Geiger: They are included.

Q. But they receive what is denominated administration salaries in that set-up amounting to how much?

A. $488,158.30 as shown in Exhibit No. 79.

Commissioner Geiger: What does that average, about $40,000.00?

Mr. Butler: Not quite. It would have to be 560.

2498

[fol. 945] Mr. Davies: Little over 35,000.

The Witness: 35,600.

Commissioner Geiger: How much?

The Witness: 35,600 in round figures.

2502

[fol. 946] Q. Well, you testified as to the amount of stock now issued by the Columbia Engineering and Management Company, and could you tell us whether or not any of that stock was distributed as a bonus to any of these officers?

A. No.

Q. Any of these 314 or 48?

A. The stock of the Columbia Engineering and Management Corporation is all owned by the Columbia Gas & Electric Corporation.

2507

[fol. 947] Q. The dividend history.

A. Columbia Engineering and Management Corporation was organized in November 1925. At that time it was a subsidiary of the Columbia Gas & Electric Company of West Virginia, whose major operations were in Cincinnati and Dayton. During the year 19——

Q. How much capital——

A. A hundred thousand dollars.

Mr. Turner: I want the record to show in this case an objection and exception to each question.

Commissioner Geiger: All right.

The Witness: In 1926 the capital——

Commissioner Geiger: What was the capital in 1925, November?

The Witness: $100,000.00.

Commissioner Geiger: $100,000.00. Does it show to whom the stock was issued, or do you know?

The Witness: I don't know.

Commissioner Geiger: All right.

The Witness: In 1926 the capital stock was increased to $350,000.00.

Commissioner Geiger: By what, a stock dividend?

The Witness: By transferring $250,000.00 from surplus.

Commissioner Geiger: No more extra money paid in? All right. Go ahead.

2508

[fol. 948] Mr. Turner: Now, you are asking about mat-

ters before the Engineering and Management Corporation had anything to do with the Columbus Gas & Fuel.

Commissioner Geiger: Are you objecting?

Mr. Turner: Yes, sir, I am objecting.

Commissioner Geiger: Overruled.

Mr. Turner: Note exception.

The Witness: 1927, no dividends paid. 1928, cash dividend of $2,250,000.00 and the capital stock was increased to $1,000,000.00 by transferring $650,000.00 from surplus to capital.

By Commissioner Geiger:

Q. What was that dividend in 1928?

A. Cash? $2,250,000.00; increase in capital stock being necessary incident to the increase in the operations of the company for additional working capital, property and so forth.

By Mr. Butler:

Q. Then in '29 what dividend?

A. '29, as I stated before, $2,000,000.00 cash dividends. 1930, $1,500,000.00 cash dividends.

By Commissioner Geiger:

Q. Now, may I ask this question there, during the whole course from 1929 to 1930 there was no more money paid in by the stockholders or those who received the stock than that which was paid in in 1925, to-wit, $100,000.00; it was gained by stock dividends and surpluses and other——

A. The increase resulted from transfer of surplus to capital.

Q. Yes, but it started with a payment of $100,000.00?

A. As I understand.

Q. Which was all that was paid in originally, and now, 2509

[fol. 949] it is up to one million dollars?

A. One million.

Q. And a payment of a dividend as you have related?

A. That is correct.

[fol. 950] Mr. ALLENSWORTH testified as follows:

3406

[fol. 951] Q. In the statement of your experience you have referred to previous experience in appraising and evaluating the properties of The Columbus Gas & Fuel Company; when was that?

A. That was in the years 1924 and 1925, 1926 and 1927, in which work I made a study and appraisal of the proportion of this Company, that is, The Columbus Gas & Fuel Company, in the 1925 case before the Master in the Federal Court.

Q. Now have you made an investigation and study of the inventory and appraisal heretofore filed in this case by The Columbus Gas & Fuel Company?

A. I have.

Q. Have you prepared, or had prepared under your supervision, an analysis of The Columbus Gas & Fuel Company's statement of reproduction cost of distribution mains and services and meters used and useful for furnishing natural gas within the City of Columbus as of December 31, 1929?

A. I have made such an analysis, yes, sir.

Q. And is that an analysis of the statement which is

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[fol. 952] revealed in detail in what has been introduced here in evidence as Company Welker Exhibit No. 2?

A. It is.

Mr. Huffman: This may be marked as City's Exhibit No. 55 for identification.

And thereupon the document last above referred to is marked for purposes of identification herein as City Exhibit No. 55.

Q. Mr. Allensworth, I direct your attention to what has been marked for purposes of identification as City Exhibit No. 55; is that a copy of the analysis that you have made of the Company's alleged reproduction cost as to the items to which I have just referred previously?

A. It is.

Q. Will you please explain this exhibit?

A. What has been marked as City's Exhibit No. 55 is an analysis of the Company's claimed reproduction cost distribution mains, services and meters, which reproduc-

tion cost is revealed in detail in what has been introduced in this case as Company Welker Exhibit No. 2.

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[fol. 953] By Mr. Huffman:

Q. Mr. Allensworth, have you made a reproduction cost valuation of the properties of the Columbus Gas & Fuel Company as of December 31st, 1929?

A. I have, yes, sir.

Q. In preparing your various exhibits, and this one in particular, have you followed the uniform classification of accounts as prescribed by the Public Utilities Commission of Ohio?

A. I have.

Q. Over what period of time does your theoretical reproduction of this property extend?

A. I have assumed a three year construction period.

Q. Is it your conception that this period ends on December 31st, 1929 or begins on December 31st, 1929?

A. In accordance with my theory the construction period starts as of the date certain of the appraisement, which is December 31st, '29 in this case.

Q. In your opinion is that in length of time a fair period for the reproduction of these properties?

A. I consider a three year construction period to be ample, even generous.

Q. Have you used the same period in considering the overheads that you have allowed in the case?

A. I have, yes, sir.

Q. You have used the same identical period of time?

A. Yes, sir.

Commissioner Bricker: What is the company's construction period?

Mr. Huffman: Three years; the same length of time.

The next exhibit we will have marked for identification as Allensworth Reproduction Cost of the Columbus Gas &

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[fol. 954] Fuel Company's properties as of December 31st, 1929, I will ask the stenographer to mark City's Exhibit No. 56.

And thereupon the exhibit above referred to was marked for purpose of identification as City's Exhibit No. 56.

Q. I call your attention, Mr. Allensworth, to what has been marked for purposes of identification as City's Exhibit No. 56, and ask you if that is the valuation of the properties of the Columbus Gas & Fuel Company representing the reproduction cost as of December 31, 1929?

A. It is.

Q. And this exhibit has been prepared by you or under your direct supervision?

A. Yes, sir.

Mr. Huffman: Before we go further with an explanation of this exhibit, I would like to read for the Commission and the record certain acceptances which the engineer has been advised by counsel to use in his reproduction of these properties, and in the placing of the depreciation on certain properties, and the reproduction cost generally as is explained in the acceptance direction which was handed to Mr. Allensworth, which I am about to read.

Mr. Turner: What do you mean by acceptance?

Mr. Huffman: That is that certain items shall be included as set forth by the company; that certain figures are accepted. You will find out, as I read it, however.

Mr. Turner: Well, I don't want to be put in the position of having you testify, but if it is something you are accepting of our figures, we have no objection to that.

Mr. Huffman: It changes no figures to which you will

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[fol. 955] have objection I am quite sure. If it does, you are at liberty to stop me.

Mr. Turner: I don't like to do that; you may correct something afterward that I would be objecting to.

Mr. Huffman: In the preparation of his valuation of the properties of the Columbus Gas & Fuel Company for services allocated to service within the city of Columbus as of December 31st, 1929, H. R. Allensworth is instructed to accept and use the company's statement as to the following items, in the company's valuation.

Land: "Distribution system land" and "Other general land" as revealed in Company Welker's Exhibit No. 2 and Company Welker Exhibit No. 5 per appraisal of Valuation Committee of the Columbus Real Estate Board, both as to reproduction cost new and as to reproduction cost new less depreciation.

Rights-of-way: As to the reproduction cost new and as to reproduction cost new less depreciation. In other words, there are no differences; we are accepting the company's figures for those items.

District regulator structures: As to reproduction cost new and as to reproduction cost new less depreciation, both statements subject to agreed inventory corrections. Regulator structures for regulator No. 103 located at Clifton and Meadow Park Avenue revealed in the Company's Reproduction Cost Appraisal in the amount of $72.30 is eliminated because it serves Bexley only. Regulator structures for regulator No. 131 located at Mound Street and Dana Avenue revealed in the company's reproduction cost appraisal in the amount of $76.98 is eliminated because it is property of the Federal Gas & Fuel Company. These

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[fol. 956] agreed eliminations reduce the company's reproduction cost of regulator structures from $10,847 to $10,698, and reduce the company's reproduction cost less depreciation from $9,722 to $9,601.

Measuring station structures: As to reproduction cost new and reproduction cost new less depreciation, subject to agreed inventory corrections. The Company's reproduction cost statement includes a concrete gate box at the Eastmoor measuring station, which was erroneously described and presscribed as being larger than it in fact is. This correction reduces the company's reproduction cost new from $14,959 to $14,868, and reduces the company's statement of reproduction cost new less depreciation from $14,721 to $14,630. These, I might say, are comparatively small figures, but they serve to indicate how near the company and the engineers' investigation shows these valuations to be together, so we think they are of considerable value for calling attention to that fact if for nothing else.

Holder station structures: As to reproduction cost new.

District regulators: As to reproduction cost new and reproduction cost new less depreciation subject to agreed inventory corrections. A check of the company's inventory revealed numerous inventory errors including the inclusion of regulator No. 103 located at Clifton and Meadow Park Avenues, which regulator serves only Bexley and the inclusion of regulator No. 131 located at Mound and Dana Avenue, which regulator is property of the Federal Gas &

Fuel Company. These corrections reduce the company's reproduction cost new from $31,311 to $31,300——

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[fol. 957] Mr. Turner: Eleven dollars.

Mr. Huffman: And reduce the company's reproduction cost new less depreciation from $30,097 to $30,095.

Mr. Turner: Two dollars.

Mr. Huffman: Gas holder: As to reproduction cost new.

Gas holder appurtenant equipment: As to reproduction cost new.

House regulators: As to reproduction cost new.

Other distribution equipment: As to reproduction cost new and reproduction cost new less depreciation subject to agreed inventory corrections. A check of the company's inventory reveals many inventory errors, the correction of which increases the company's reproduction cost new from $18,017 to $18,990, and increases the company's reproduction cost new less depreciation from $17,513 to $18,487.

Commissioner Bricker: You are going the wrong way, aren't you?

Mr. Huffman: Well, I think that action does result in an increase does it not, Mr. Allensworth?

Mr. Allensworth: It does.

Mr. Huffman: We have tried to give credit where credit is due, Mr. Commissioner. That is a score for the other side, and we will admit it.

Mr. Turner: We need that two dollars, too.

Mr. Huffman: Well, it is a number of corrections, and in making those corrections as is shown here, they resolve themselves in favor of the company.

Other general structures: As to reproduction cost new and as to reproduction cost new less depreciation.

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[fol. 958] General office equipment: As to reproduction cost new.

General shop equipment, tools and implements: As to reproduction cost new.

General garage equipment: As to reproduction cost new.

There follows a summary of the above items including the respective amounts which Mr. Allensworth is instructed to accept as to reproduction cost new for each item and as

to reproduction cost new less depreciation for those items to which these instructions apply.

Distribution system land: Reproduction cost new $42,250; reproduction cost new less depreciation, $42,250.

Mr. Turner: Just what do you mean by that; is that our value or are you testifying to a value or what?

Mr. Huffman: That is your value which Mr. Allensworth is instructed to accept.

Mr. Turner: All right.

Mr. Huffman: Those are the figures of the company you will find. Other general land, $52,380——

Mr. Turner: That is not right.

Mr. Huffman: There is another general land which is included at $52,380, which I think has caused your difficulty there, Mr. Turner;

Mr. Turner: All right.

Mr. Huffman: Other general land: $52,380 reproduction cost new; and reproduction cost new less depreciation $52,380. That, of course, is added to the other land to make the total land excluding rights-of-way.

Rights-of-way: $5,072 for the reproduction cost new; reproduction cost new less depreciation the same figure,

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[fol. 959] $5,072.

District regulator structures as corrected: Reproduction cost new $10,698; reproduction cost new less depreciation $9,601.

Measuring station structures as corrected: Reproduction cost new $14,868; reproduction cost new less depreciation, as corrected, $14,630.

Holder station structures: Reproduction cost new, $3,207 and no figure for reproduction cost new less depreciation.

District regulators as corrected: Reproduction cost new, $31,300; reproduction cost new less depreciation $30,095.

Gas holder: Reproduction cost new, $155,000; no comparable figure for reproduction cost new less depreciation.

Gas holder appurtenant equipment: Reproduction cost new $31,828; no comparable figure for reproduction cost new less depreciation.

House regulators: $16,957 reproduction cost new, and no comparable figure for reproduction cost new less depreciation.

Other distribution equipment, as corrected: $18,990 for reproduction cost new, and reproduction cost new less depreciation $18,487 as corrected.

Other general structures: Reproduction cost new $102,153; reproduction cost new less depreciation, $101,836.

General office equipment: Reproduction cost new $33,902 and no comparable figure instructed for reproduction cost new less depreciation.

General shop equipment, tools and implements: $18,684 reproduction cost new, and no comparable figure given for

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[fol. 960] reproduction cost new less depreciation.

General garage equipment: As to reproduction cost new $51,197 and no comparable figure for reproduction cost new less depreciation.

Q. Mr. Allensworth, those were the acceptances which you were directed to proceed upon, were they not?

A. Yes, sir.

[fol. 961] Q. I direct your attention to page No. 1 of what has been marked for the purposes of identification as City exhibit No. 56 which is known as Allensworth reproduction cost on Columbus Gas & Fuel Company's property as of December 31, 1929, and ask you to explain first what is included under the heading, "Distribution system property", account No. 228, land, and direct your attention particularly to the first column under the heading, "Reproduction cost new".

A. The amounts appearing opposite the titles under the general title No. 228 land, are "Regulator and measuring station land in use", in the amount of $23,150; proposed regulator land, in the amount of $400, and holder station land in the amount of $18,700. The total of these items is $42,250 as here appears opposite the title, "Total".

The item proposed regulator land in the amount $400 is the company's reproduction cost of two holder station sites not in use as of December 31, 1929, one of them located at Hudson Street and Grasniere Avenue, and the other one located on North High Street and Westwood drive.

The item holder station land in the amount of $18,700 is the company's reproduction cost of land occupied by the gas holder. All of those amounts are the company's reproduction cost as determined, I believe, by a valuation com-

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[fol. 962] mittee of the Columbus Real Estate Board.

Q. What was the total for that?

A. The total is $42,250.

Q. As to the next item, 230, rights-of-way, what explanation have you for that?

A. The next item, account 230, rights-of-way, in amount $5,072 is the company's reproduction cost of that item.

Q. Your account No. 231 which designates district regulator structures; what amount have you included?

A. $10,698, which is the same as the company's reproduction cost except as to inventory corrections, which inventory corrections eliminate the building over regulator No. 103 located at Clifton and Meadow Park Avenues, and regulator No. 131 located at Mound and Dana.

Regulator No. 103 at Clifton and Meadow Park Avenues serves only Bexley. Regulator No. 131 at Mound Street and Dana Avenue was the property of the Federal Gas & Fuel Company. These inventory corrections were agreed to by a representative of the company.

Q. The next item, No. 232?

A. Account No. 232, other distribution system structures, is here shown in two items, first measuring station structures in the amount of $14,868. This is the same as the company's reproduction cost except for agreed inventory corrections. The company's inventory shows a concrete gate box at the Eastmoor measuring station. The amount of correction due to that inventory discrepancy was in fact $91.

The next sub-division of this item, holder station structures in the amount of $3207; that is the company's reproduction cost of those items.

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[fol. 963] The next item, "Total" in the amount $18,075 is the sum of the two previous items.

Q. Pass to account No. 233 gas receivers and district regulators, and explain that column.

A. Account 233, gas receivers and district regulators is here shown in three items; District regulators in the amount of $31,300, is the same as the company's reproduction cost excepting for agreed inventory corrections.

The next item, gas holder, in the amount $155,000; that is the company's reproduction cost of that item.

The next item, gas holder appurtenant equipment in the amount of $31,828; that amount is the company's reproduction cost for these items.

The next item, total, $218,128, is the sum of the previous three amounts.

Q. What does the gas holder appurtenant equipment include, Mr. Allensworth?

A. That includes an electric motor, an impeller pump, valves, fittings, and heating equipment to heat water in the holder during freezing weather, and the equipment and fittings associated with that heating equipment.

Q. You may discuss account No. 234, distribution line equipment.

A. 234, distribution line equipment. Opposite the title, "Mains" will be found the amount $2,431,236, which is my reproduction cost of the distribution mains for service within the city of Columbus as of December 31, 1929.

The next item, paving over mains, revealed here in the amount $81,249 is my statement of reproduction cost of the pavement over mains actually cut at the time of the original installation of the mains.

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[fol. 964] The next item, "Total" in the amount $2,512,485 is the sum of the two previous items, or the total of my reproduction cost for distribution line equipment main, These three amounts appearing on page 1 of what has been marked City's exhibit No. 56 are supported by detail appearing on pages 9, 10, 11, 12 and 13 of this exhibit.

Q. You may pass to the next item, 235, service line equipment.

A. The next item, account No. 235, service line equipment; the amount shown opposite the title "Services" namely $505,500 is my reproduction cost of services in use within the city of Columbus as of December 31, 1929.

The next item "Paving over services" in the amount $16,402 is my reproduction cost for paving actually cut at the time of the original installation of services. The next amount——

Q. Just a minute. To your knowledge the company includes no figure for that which is comparable to this figure which you use, is that correct?

A. It does not include any such amount in its reproduction cost.

The next item "Total" in the amount of $521,902 is the sum of the service items, and is my total reproduction cost of services as of December 31, 1929. These amounts are supported by details appearing on pages 14, 15, 16 and 17 of this exhibit.

Q. The next item No. 236 and 237, meters and meter installations; you may explain that.

A. The next item, account No. 236 and 237, meters and meter installation, opposite that title is revealed the amount $499,011. This is a statement of the reproduction cost of meters in use as of December 31st, 1929, and this amount

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[fol. 965] is supported by details appearing on pages 18, 19, 20, 21 and 22 of this exhibit.

Q. What have you to say relative to account 238, house regulators?

A. The amount shown opposite the title, "Account No. 238, house regulators", namely $16,997, is the company's reproduction cost of this item.

Mr. Turner: Mr. Huffman, won't you give us a copy of of your question and answers like we did you?

Mr. Huffman: I don't have such an animal.

Mr. Turner: I thought you were reading them and he was reading it. He has been reading something here.

Mr. Huffman: Only a few questions.

Q. You may take up account No. 239, other distribution equipment.

A. Account No. 239, other distribution equipment. Opposite that title there appears the amount $18,990. This is the same as the company's reproduction cost excepting as to agreed inventory corrections. The amount here appearing namely $18,990, is supported by detail appearing on page 23 of this exhibit.

Q. And what does other distribution equipment include, Mr. Allensworth?

A. Other distribution equipment is measuring station and regulator station equipment; it is largely regulator station equipment.

Q. What total do you have for distribution property as set forth in the first column of page 1?

A. The next to the last item on this page 1 of what has been marked City's Exhibit No. 56 is "Total distribution property", and in the column entitled, "Reproduction cost

new'' there appears the amount $3,813,568. That is my reproduction cost of inventory quantities so far revealed
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[fol. 966] on this page 1. That amount is carried forward and is shown as the first item on page 2.

Q. Yes. You may turn to page 2, column 1 of the same exhibit and explain account No. 245, which includes other general lands.

A. Account No. 245, other general lands, is revealed in the amount $52,380. This is the same as the company's reproduction cost for that item.

Q. You may take up the next item, account 248.

A. Account No. 248, other general structures, in the amount $102,153. This is the same as the company's reproduction cost for this item.

Q. Explain the next item, account 249, will you?

A. Account No. 249, general office equipment, is revealed in the amount $33,902. This is the same as the company's reproduction cost for this item.

Q. You may pass to the next accounts, which are combined, No. 251 and 256 including general shop equipment.

A. Accounts No. 251-256, general shop equipment, tools and implements, is revealed in the amount $18,684. This is the same as the company's reproduction cost for that item.

Q. You may explain account No. 253 as disclosed on this page.

A. Account No. 253, general garage equipment, is revealed in the amount $51,197. This is the same as the company's reproduction cost for that item.

Q. That is, it is the same as the company's reproduction cost new?

A. Yes, sir. The next item, ''Total general property'' is the sum of the amounts shown opposite accounts No. 245, 248, 249, 256, 251, 253. This total here appears in the amount $258,316.

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[fol. 967] By Commissioner Bricker:

Q. That is substantially the same as the company's figure here?

A. That general property is the same as the company's.

By Mr. Huffman:

Q. And what is the total figure at which you have arrived for distribution and general property as it revealed in column No. 1 of page 2 of City's Exhibit No. 56?

A. Reproduction cost new of total distribution and general property totals $4,071,884.

Q. I see you have set forth for the next item on page No. 2 undistributed construction expenditures. Will you please discuss that?

A. Undistributed construction expenditures are shown in the amount $590,947. For convenience I have shown that amount divided into engineering and supervision, general and legal expense, omissions and contingencies, interest during construction, taxes during construction. Opposite the title, "Engineering and supervision will be noted the amount $193,728." Opposite the title general and legal expenses appears revealed the amount $38,745.00. Opposite omissions and contingencies there is revealed the amount $116,236. Opposite the title Interest During Construction there appears the amount $238,453. Opposite the item "Taxes During Construction" there appears the amount $3,785. The sum of these amounts is as shown opposite the title "Total Undistributed Expenditures", $590,947.00.

By Commissioner Geiger:

Q. What page is that on?

A. Page 2.

By Mr. Huffman:

Q. Mr. Allensworth, you have set forth under this heading an allowance for omission and contingencies?

A. I have.

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[fol. 968] Q. Under the heading of contingencies have you provided for a percentage based on lost time due to rain, weather conditions, and frozen ground, traffic interruptions, special cost because of congested business zones, tunneling, excavations, rock excavation and such incidents as that?

A. My unit costs are average unit costs, so averaged to meet average conditions in Columbus. The item omissions and contingencies in the amount of $116,236 provides for

any of the items that you have enumerated, if not provided for adequately in unit costs?

Q. Then am I correct in my understanding that you have based this allowance on an average performance which includes the consideration for those contingencies?

A. My unit cost, yes; they are based on an average performance.

3448 and 3449

[fol. 969] Q. What is the total reproduction cost new as found by you, Mr. Allensworth, for the properties of the Columbus Gas & Fuel Company allocated to service within the city of Columbus as of December 31, 1929, as shown at the bottom of the first column on page 2 of City's Exhibit No. 56?

A. My total reproduction cost including $80,000 for working capital, inclusive of material and supplies is $4,742,831. This total reproduction cost is reproduction cost of corrected inventory quantities allocated to service within the city of Columbus as of December 31, 1929.

[fol. 970] By Commissioner Bricker:

Q. What is the reason, Mr. Allensworth, that you do not include in the amount for working capital including materials and supplies an amount sufficient for the purchase of gas, or make an allowance for that?

A. Because of the fact, Your Honor, that bills payable for gas purchased are not due until the 15th of the month following the month under which the gas was purchased.

Q. And it is paid for on the 10th?

A. How?

Q. When is it paid for?

A. The 15th.

Q. No, I mean by the consumer?

A. The consumer pays bills more or less continuously; the payment dates are scattered through the month; but the collection for gas distributed the month previous is in the hands of the company before the bill is due and payable for gas purchased; in other words, the consumer is paying his bill finances the company in its purchase of gas.

By Commissioner Geiger:

Q. Your estimate of the value of the property after—well, your last column as shown there, 4,742,831; what is

the corresponding figure furnished by the engineers of the company?

A. Six million and something.

Q. You don't know the amount?

A. I haven't it before me. But that is reproduction cost, Your Honor; there is no——

Q. Six plus.

A. There is no deduction as yet on this.

Mr. Turner: Six million one hundred thirty-six thou-

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[fol. 971] sand, seven hundred forty-two dollars.

Commissioner Geiger: That corresponds to the figure in the third column?

Mr. Turner: No, the figure in the first column.

Mr. Huffman: That is reproduction cost new without applying the depreciation?

Mr. Turner: Yes, sir.

A Voice: Or without deduction.

Mr. Turner: The difference is $1,633,461.

Mr. Huffman: In the reproduction cost new figure.

3466

[fol. 972] By Mr. Huffman:

Q. Mr. Allensworth, now directing your attention to column No. 3 of City's Exhibit No. 56, page 1, will you please explain to the Commission your reproduction cost new of property used and useful of the Columbus Gas & Fuel Company as of December 31, 1929?

A. The last column on pages 1 and 2 of what has been marked City's Exhibit No. 56, that is the last column to the right, is a statement of the reproduction cost of the property of the Columbus Gas & Fuel Company used and useful for service to the City of Columbus as of December 31, 1929. It is in fact the amounts appearing in the first column less the amounts appearing in the *first column*

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[fol. 973] *less the amounts appearing in the* second column; and the sum total at the bottom of page 2, namely $4,503,281 is my total reproduction cost of property used and useful for service within the city of Columbus as of December 31, 1929.

Q. The last figure in column 2 of page 2 of city Exhibit 56 represents your reproduction cost new less deductions, of December 31st, 1929?

Commissioner Geiger: I think we have had that about four times.

Q. But that is not your depreciated figure?

A. It is not.

Q. Will you please explain briefly what is included to which you have not already referred on pages——

A. I have referred to——

Q. 3 to 23 inclusive?

A. I have referred to all of the pages in this exhibit excepting pages 3 to 9. On page 3 and 4——

Commissioner Geiger: I think it shows what they are, doesn't it?

The Witness: I think so.

Mr. Huffman: Well, I would like to have it in the record, if you don't mind, Your Honor.

Commissioner Geiger: Well, isn't this in the record?

Mr. Huffman: Well, it is an exhibit, yes; it will be an exhibit. We have identified it for that purpose.

Commissioner Geiger: All right; but I am unable to see why a thing set down in an exhibit, it is necessary to get it in the record again. They are in the record; it is just a lot of figures. But go ahead.

3468

[fol. 974] Mr. Huffman: Well, it is not fully explained and we would like to make up our record as we go along, if you don't mind.

The Witness: The detail appearing on pages 3 and 4 supports the amount found on page 1 opposite account No. 231, district regulator structures.

The detail appearing on 5 and 6 supports the amount found on page 1 opposite the account No. 233, gas receivers and district regulators.

The amounts appearing on pages 7 and 8 support the amount appearing on page 1 opposite the title "District Regulators", the amount being $31,300. The remainder of the pages in this exhibit supports the amount revealed in the summary on pages 1 and 2; distribution line equipment, service line equipment, meters and meter installation, as have been heretofore explained in my discussion.

Q. You have no further explanation which you wish to make relative to city Exhibit 56?

A. I think not.

Mr. Turner: Now, we have no exhibit comparable to our exhibit 56 which we can tell anything about gang performance or the unit cost. We cannot break them down from anything that you have given us at all.

Mr. Huffman: Well, gang costs will be discussed in future exhibits; but if you have made a separation of that sort——

The Witness: I have supplied to Mr. Huffman and I think you supplied to the company the detail of my unit costs.

Mr. Huffman: Yes, I have turned over to the company the detail of unit costs as you handed it to me. Of course, I am not familiar with everything that it includes.

3469

[fol. 975] Mr. Turner: Mr. Galland has looked it over here since you handed these two copies only over. I haven't seen one of them. Mr. Galland can tell you more about it.

Mr. Galland: This exhibit just handed to us consists of what I might term a breakup in unit costs into various items. It does not contain the basis upon which the unit costs are built, or upon which they are broken up. No crew performance. There is no labor rate; there is no detail; there is no detail as to the amount of each kind of work done per day or anything of that sort. It is simply a breakup into the elemental parts of the unit costs without any reasons for breaking up.

Mr. Turner: The elements of cost are not there.

Commissioner Geiger: Well, you furnished them the elements of your——

Mr. Turner: Oh, yes, sir.

Commissioner Geiger: Wait a minute. Can you furnish them the element from which you made these figures?

The Witness: Yes. I have given to the company the details of my unit cost. The basic facts upon which those unit costs are developed will be revealed in my testimony to a very large extent. Anything further that the company wishes they may have upon inquiry, and I wish to correct counsel for the other side. There has not been presented any exhibits. That is not an exhibit.

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[fol. 976] Mr. Huffman: The next is City's Exhibit No. 57, being an Analysis of Allensworth's Reproduction

Cost; I ask that that be marked for purposes of identification as City's Exhibit No. 57.

And thereupon the document last above referred to was marked for purposes of identification herein as City's Exhibit No. 57.

Q. Directing your attention, Mr. Allensworth, to what has been marked for purposes of identification as City's exhibit No. 57, I ask you to explain what that is?

A. The data and figures in what has been marked City's Exhibit No. 57 is an analysis of my reproduction cost comparable in every way to the analysis I have submitted of the Company's reproduction cost.

Q. And this Exhibit No. 57 is designated "An Analysis of Allensworth Reproduction Cost"?

A. It is so designated, and properly so.

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[fol. 977] Mr. Huffman: This may be marked for purposes of identification as City's Exhibit No. 58.

And thereupon the Document last above referred to is marked for purposes of identification herein as City's Exhibit No. 58.

Q. Mr. Allensworth, I direct your attention to what has

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[fol. 978] been marked for the purpose of identification as City's Exhibit No. 58 and ask you to state what that is?

A. What has been marked City's Exhibit No. 58 is a collation of the Company's reproduction cost and my reproduction cost of distributing mains, services, and meters of every property for service within the City of Columbus as of December 31st, 1929.

In this exhibit I reveal for the information of the Commission the Company's reproduction cost in detail as analyzed by myself; my reproduction cost in detail as analyzed, and the differences obtaining between the amounts in the detail of various accounts.

Q. This exhibit is a collation then of the Company's reproduction cost and of Allensworth reproduction cost and shows the differences resulting from this set-up?

A. That is correct.

Mr. Butler: Just for mains and services and meters?

Q. Mr. Allensworth, this collation as set forth in City's Exhibit No. 58 relates to the Company's plant described under the heading "Distribution mains, services and meters", is that correct?

A. The reproduction of those classifications of property, yes.

Q. On page No. 1, Mr. Allensworth, of this exhibit under the item "Distribution Mains", the Company's reproduction cost $2,835,631.61, Allensworth's reproduction cost $2,431,236.42, and the difference as set forth in the third column, the last column to the right, on page 1 of this exhibit, is $404,395.19; will you please explain that difference?

A. Yes. However, I would like to explain first, that the amounts appearing on this page 1 of what has been marked

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[fol. 979] as City Exhibit No. 58, in the column titled "Company's reproduction cost" are amounts brought forward from what has been marked City's Exhibit No. 55.

The amounts appearing on this page 1 of what has been marked City's Exhibit No. 58 appearing in the column titled "Allensworth Reproduction Cost" are brought forward from City's Exhibit No. 57.

The amounts appearing in the column titled "Differences" are the differences between the amounts appearing in the two previous columns.

The first title "Distribution Mains", in the amount $2,835,631.61, appearing in the first column on this page is Company's reproduction cost of distribution mains, not including collar leak clamps or paving over mains.

The amount opposite that item in the second column on this page, $2,431,236.42, is my reproduction cost of distribution mains not including pavement over mains.

The "Difference", $404,395.19, is the difference between the Company's reproduction cost and my reproduction cost, which difference will be explained in detail in further reference to this exhibit.

The item "Paving over Mains", reveals that the Company has in its reproduction cost statement the amount $100,254.63 for the item "Pavement over mains actually cut at the time of original installation."

In my reproduction cost as is revealed in the second column on this page opposite the title "Paving over Mains" there is included the amount $81,248.70; the difference is

$19,015.93. This difference is due to two facts, first, my 3487
[fol. 980] reproduction cost of paving over mains is based upon corrected inventory quantities; and in connection with corrected inventory quantities there is a secondary fact, that the Company takes, as the quantities of paving actually cut at the time of original installation, certain figures which I know to be in error.

The quantities of paving cut at the time of original installation in my reproduction cost are taken from the City records of the paving that actually existed at the time the mains were laid.

Also there is a difference in the pricing of the kinds of paving over mains. The prices used in my reproduction costs are the prices charged for repaving over trenches by the City Paving Department as of December 31st, 1929.

The other differences appearing on this page will be discussed in detail with reference to the subsequent pages of this exhibit.

Commissioner Bricker: Do you think it proper to take the paving over mains costs as of the date certain rather than the date of the actual cutting, since the Supreme Court has obviously taken this one item out of the reproduction cost theory entirely?

The Witness: I think so, yes; I think that is a proper interpretation of the reproduction cost theory, to price the pavement over the mains at the reproduction cost of the pavement as of the date certain of the valuation, confining the reproduction cost to the paving and the kind of paving actually cut at the time of the original installation of the mains.

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[fol. 981] By Mr. Huffman:

Q. You may proceed with page No. 2, Mr. Allensworth, and discuss the difference as set forth on that page.

A. Directing attention to page 2 of this exhibit, there is revealed three columns of figures; the column to the left, titled "Company's Reproduction Cost"; and the third column titled "differences." The amounts appearing on this page under the title "Company's Reproduction Cost" is the Company's claimed reproduction cost of distribution mains not including pavement over mains, which reproduc-

tion costs are revealed in cross summary form, showing the amount contained in the Company's reproduction cost and for material, labor and other charges. Likewise in the column titled "Allensworth Reproduction Cost", my reproduction cost of distribution mains is revealed in the same form.

The third column, "Differences", is the differences between the two amounts appearing opposite each title.

Directing particular attention to the first item on this page under the general title "Material", there appears the title "Pipe, F. O. B. Supplies", and opposite that, in the Company's reproduction cost, the amount $1,432,417.80, which is the amount contained in the Company's reproduction cost for the cost of pipe in mains F. O. B. the supplier of the pipe.

Opposite that, in the column titled "Allensworth Reproduction Cost", there appears the amount $1,416,443.00; that is the amount contained in my reproduction cost as the cost of pipe in mains F. O. B. supplier.

The difference between these two amounts is $15,974.80.

In pricing pipe I made inquiry into the prevailing 3489 [fol. 982] market prices of the various kinds of pipe in these mains as of December 31st, 1929. I extended the inventory quantities against the price of pipe quoted in the open market. I find that for the price of wrought iron pipe and steel pipe the prices appearing in the Company's reproduction cost statements are correct to the market as of that date.

The cast iron pipe in the Company's reproduction cost statement is priced at $40.00 per ton, whereas the actual price of cast iron pipe as of December 31st, 1929, was $37.00 per ton, which is the price used in my reproduction cost appraisal.

Birmingham quotations control the market price of cast iron pipe. The Birmingham quotation at the end of December, 1929, was $34.00 per ton for water pipe, six inches and over gas pipe $3.00 extra per ton.

The open market quotation at Chicago was $42.20, which was the Birmingham price plus freight to Chicago.

Actual sales of 6500 tons of cast iron pipe were made in December of 1929 at Milwaukee at the price of from $42.50 per ton to $42.75 per ton, the freight rate to Milwaukee at that time being $8.50 per ton.

Commissioner Bricker: That was the delivered?

The Witness: That was the delivered price after adding freight.

Commissioner Bricker: That is what I mean, delivered price at Milwaukee.

Mr. Turner: Of gas or water?

The Witness: That was water pipe.

By Mr. Huffman:

Q. You may proceed, have you finished with that subject? 3490

[fol. 983] A. No, if you will pardon me.

Q. Proceed.

A. The total cost of cast iron pipe F. O. B. foundry in the Company's reproduction cost is $346,617.71. In my reproduction cost here is included in the cost of cast iron pipe and the amount of $323,280.05; the difference being $23,337.66.

However, I have 4291 feet more of cast iron pipe in my corrected inventory than the Company has in its inventory.

Q. Will you explain how that comes about?

A. That is due to the fact that in reviewing the Company's inventory errors were found, and the error in the cast iron pipe was an omission in the Company's inventory of 4291 feet which 4291 feet is added and included in my corrected inventory.

In addition to that there are other corrections in my inventory of mains. In addition to the added number of feet of cast iron mains there is added in my corrected inventory 19,826 feet of wrought iron mains, and a reduction of 21,491 feet of steel mains. The net effect of correction in the pricing of cast iron mains and inventory corrections is the amount shown on page 2 of what has been marked City's Exhibit No. 58 opposite the title "Pipe cost F. O. B. supplier" in the column titled "Differences", the amount being as shown $15,974.80.

Commissioner Bricker: Mr. Allensworth, how do you ascertain the errors in inventory?

The Witness: By re-inventorying, so to speak. My assistant was delegated to check all of the items in the Company's inventory for accuracy, and in making that check

these discrepancies or errors were discovered and corrections made.

Commissioner Bricker: Did you make an actual examina-

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[fol. 984] tion of the pipe to determine whether or not it was wrought iron or steel or cast iron pipe?

The Witness: No, that was impossible, or practically impossible. All inventories of mains are taken from the atlas sheets of the Companies owning the mains; it is presupposed that the company must maintain its atlas sheets or its physical records of its mains as accurately as that record may be kept. There may be a question as to whether or not all of the mains designated as wrought iron mains are wrought iron mains.

Commissioner Bricker: Your check then was against the Company's records of its own inventory?

The Witness: No, pardon me, my check was against the Company's records from which the Company made its inventory.

Commissioner Bricker: Well, that is what I meant to say.

The Witness: It may be—in my own opinion it is quite possible that there are some mains shown on the atlas sheets of the Company as wrought iron mains that are in fact steel, but I have no way of proving the error; that is just my judgment, and, whether or no, I have accepted the Company's records as the elemental basis of the inventory and the corrections were made from that source.

Mr. Butler: Mr. Allensworth, do I understand that in respect of reproduction cost of pipe F. O. B. supplier the difference between the City and the Company is merely a matter of $3.00 per ton on cast iron; I refer to the pricing?

The Witness: That is the only difference in pricing, is $3.00 per ton on cast iron.

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[fol. 985] Commissioner Bricker: And your total of freight on that cast iron is only $372.00 higher on the Birmingham shipments than the Company had?

The Witness: No; pardon me, Mr. Commissioner, you are anticipating a discussion; that is the freight on all of the pipe, not on cast iron pipe, and the Company figured the freight from Birmingham.

Commissioner Bricker: The Company's freight was figured from the same point?

The Witness: Yes, sir.

Commissioner Bricker: That you have figured it?

The Witness: Yes, sir; all cast iron pipe is figured Birmingham plus, regardless of where the pipe may be cast; the price is quoted on the Birmingham market.

By Mr. Huffman:

Q. You may explain the difference resulting under the item "Accessory Materials" as shown on page 2 of this exhibit?

A. The next item appearing on this page is titled "Accessory Materials"; there is included in the Company's reproduction cost for accessory materials, that is, materials associated with the mains and not the pipe—there is included in the Company's reproduction appraisal the amount $193,790.38. There is included in my reproduction cost for this class of material $111,297.87, the difference, as shown in the last column on this page, being $82,492.51. Of this difference $83,804.46 is collar leak clamps in the Company's reproduction cost.

In my reproduction cost accessory material is greater in amount by $1,311.95 than the same items in the Company's reproduction cost eliminating collar leak clamps in 3493

[fol. 986] the Company's statement.

The net effect of these differences is the amount here shown in the last column on page 2 of this exhibit opposite the title "Accessory Materials", namely, $82,492.51.

The reason that I have more in my accessory material items—that is, more in my reproduction cost of accessory material items than has the Company for the same item is due to the fact that I have larger inventory quantities than has the Company.

Commissioner Geiger: Where did those inventory quantities come from; by actual count or by estimate?

The Witness: By actual count.

Commissioner Geiger: That is, you, in counting the inventory, you found out their accessory costs to be $1,000.00 more than the Company had reported in their inventory?

The Witness: As to accessory materials associated with mains, yes, that is correct.

By Mr. Huffman:

Q. Then, Mr. Allensworth, the figure as shown here, the difference in accessory material costs, is due to a difference in inventory and also the inclusion of collar leak clamps by the company?

A. That is correct.

Q. That you have not included?

A. There is no collar leak clamps in my reproduction cost, no, sir.

Q. And the inclusion of certain amounts for a greater inventory subtracted—or reduced to dollars and cents and subtracted from the difference in collar leak clamps gives you the figure $82,492.51?

A. Yes, sir.

Q. What is the sub-total for these items?

A. The next item appearing on this page, "Sub-Total", 3494 [fol. 987] in the Company's reproduction cost, $1,626,208.18; in Allensworth reproduction cost, $1,527,740.87; and the difference $98,467.31. This item is the sum of the two previous items appearing in the respective columns on this page.

Commissioner Geiger: Do you think it is necessary to go over that detail in explaining what is patent on its face? It is just building up a record of what is here and a child could read it. If you think it is necessary, go ahead and do it. Proceed.

By Mr. Huffman:

Q. You may explain the difference in freight totals?

A. The next item appearing on this page, "Freight", in the Company's reproduction cost there is included the amount $114,572.19, and in my reproduction cost the amount $114,944.37, producing a difference in red of $372.18. There is a larger amount by $372.18 for freight on mains in my reproduction cost than in the Company's reproduction cost statement. This difference is due to corrections in inventory quantities.

Commissioner Geiger: Due to what?

The Witness: Due to corrections in inventory quantities.

By Mr. Huffman:

Q. Mr. Allensworth, what is the total difference resulting in the cost of material?

A. The cost of material in mains, the total difference is shown in the last column on the page, $98,095.13, which is the algebraic sum of the preceding amounts.

Q. You may explain under the item "Labor" the differences resulting for hauling and distributing, etc., on page 2.

A. The next general title appearing on this page is "La- 3495

[fol. 988] bor". The first item revealed under that general title is "Hauling and Distributing".

Q. What is the total difference resulting there?

A. The difference is $33,756.30.

Q. Will you explain now how that difference occurred?

A. This difference is due to the fact that the Company's reproduction cost of hauling and distributing, that is hauling and distributing pipe, is $3.2856, per ton,

Hauling and distributing in my reproduction cost is $1.35 per ton.

Q. What amount is that again?

A. $1.35 per ton. The actual cost of distributing pipe in cities similar to Columbus for waterworks installations runs from $1.00 to $1.50 a ton; that is, usually cast iron pipe is larger sized.

The actual cost from $1.00 to $1.50 per ton for distribution of waterworks pipe compares with my $1.35 per ton that I have used, as against $3.286 which the Company says it would cost per ton to distribute pipe.

Commissioner Bricker: Did you take any quotations or work up any units, hours of labor and use of truck, depreciation, etc., to ascertain the $1.35?

The Witness: Yes, sir.

Commissioner Bricker: And those will be furnished—or are they furnished now?

The Witness: The detail is in the detail that I have already furnished the Company. Any further information I will be very glad to get it.

Mr. Turner: The detail is not there, Your Honor, as to performance or the cost of labor, wages, cost of trucks, etc; 3496

[fol. 989] we will be glad to submit it to your engineers to ascertain who is correct.

By Mr. Huffman:

Q. Will you please point out where that is included?
A. The truck performance is not in that detail.

Mr. Turner: Is the truck cost there?
The Witness: I will have to look; no, I find by glancing at the detail, that the hauling and distributing in the detail submitted to the Company's engineer is expressed in cents per foot of pipe, and the supporting detail I should be glad to prepare for them.

By Mr. Huffman:

Q. Will you furnish that to the Company's engineer?
A. I will be glad to, yes.

Commissioner Bricker: And also furnish us a copy of it.
Mr. Huffman: Yes, we can furnish it to the Commission.
Commissioner Bricker: I think it should be made a part of the record.
Mr. Huffman: Does the Commission wish that to be made a part of the record?
Commissioner Bricker: Yes, because that is the only way we can arrive at the reasonableness of the figures as contrasted with the Company's estimate; that is the only way our engineers would have; it is the only place they would have to start.

By Mr. Huffman:

Q. Mr. Allensworth, there is a difference of $1.93 per ton for this item; is there not, between your figure and the figure of the Company?
A. Yes, on the cost; and there again enters the difference in inventory quantities. There is the difference in the

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[fol. 990] cost and there is the difference in inventory quantities.
Q. How have you figured this work will be done; by truck?
A. By truck surely.
Q. For all parts of the city?
A. Yes, sir.

Commissioner Geiger: In figuring your cost of hauling your pipe and distributing it over the city do you take into consideration your starting point as far as the railroad yard is concerned?

The Witness: Yes, sir.

Commissioner Geiger: Or will it be in part delivered on its original car to certain sections of the city?

The Witness: Yes, sir.

Commissioner Geiger: Have you and the Company agreed on those underlying points?

The Witness: No, sir. I *I* understand the Company's unit cost, the Company contends that all pipe would be unloaded from freight cars and delivered to its store room and hauled from the store room. My reproduction cost is built on a proper assumption I think that the cars would be spotted at advantageous points and the pipe delivered from those points.

Commissioner Geiger: Well, does their unloading and delivering pipe involve the unloading from a freight car, hauling by truck to their yard, then unloading from that truck and reloading again from the pipes that are accumulated in the yard and distributed to points in the city where they are to be used?

The Witness: As I understand their unit, I believe that is correct.

Commissioner Geiger: And your estimate is that they should intelligently ascertain where a carload of pipe could

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[fol. 991] be spotted at the nearest switch to the place where it is to be used?

The Witness: Yes, sir.

Commissioner Geiger: And hauled from that point to the point of use?

The Witness: Yes, sir. In making those spottings and making that study they will find that the average haul in Columbus will be slightly less than three miles.

Mr. Turner: Will Your Honor ask whether there is demurrage taken into consideration?

Commissioner Geiger: Do you take demurrage into consideration?

The Witness: No sir. A properly conducted program of that kind, there would be no demurrage.

Commissioner Geiger: Demurrage, I understand, is charged for keeping a car on a siding loaded beyond a period fixed by the railroad company?

The Witness: Yes, sir, that is my understanding.

Commissioner Geiger: What is that period—one or three days?

The Witness: I think it is two or three days. However, we do know that very recently there have been many carloads of pipe delivered to the City of Columbus for waterworks installations; there is one in progress now on East Broad Street; they just completed one on Fifth Avenue; that pipe was delivered to sidings, hauled by a contractor and distributed on the street; the pipe does not have to lay in the freight yard awaiting delivery; pipe ordinarily is distributed on the street ahead of the trench work, as you

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[fol. 992] may perhaps have observed out East Broad Street pipe was laying on the street for quite some time before the work started.

Commissioner Geiger: In other words, then, Mr. Allensworth, that as to the element of distributing pipe throughout a city the size of Columbus, that you may safely estimate that cautious work would deliver the pipe at points—very near the points at which it is to be used and that it may immediately be unloaded from the car and hauled and delivered to the work ahead of the trenches?

The Witness: Yes, sir.

Commissioner Geiger: And is there or not any occasion for figuring in demurrage?

The Witness: There is no occasion for figuring demurrage.

Commissioner Geiger: Would or would not in your judgment demurrage result from an inefficient management of the distribution of that pipe?

The Witness: I would class it as that, excepting of course, that engineers always provide for accidents and contingencies, and I have in my appraisal; if there be demurrage on one car of freight that is provided for in my appraisal under the title of Omissions and contingencies, an ample allowance. We do not say that there would not be demurrage on some one car of pipe; there might be even with good management, but it is not proper to figure demurrage in basic cost on which to determine unit costs of distributing pipe.

Commissioner Geiger: Do you or not say that your allowance for contingencies is designed to cover such an item as possible demurrage?

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[fol. 993] The Witness: Yes, that or any other item not contemplated—that would be incurred and not figured directly in unit costs.

Commissioner Geiger: All right; go ahead.

Mr. Turner: Will the railroads always have the pipe there on the scheduled time?

Mr. Huffman: Of whom are you asking that question?

Mr. Turner: Well, I was interjecting; I will back out. Both of you are running it; it is all right; I will reserve it for cross-examination.

By Mr. Huffman:

Q. According to your conception then, Mr. Allensworth, of the hauling and distributing, there would be little use for warehousing?

A. If I were conducting the work there would not any of the pipe or the mains go in a warehouse.

Q. And as between the business sections and the outlying sections of the city would there be a difference in the time required for making these deliveries and distributing?

A. Oh, yes.

Q. And have you taken that into consideration?

A. Yes, sir.

Q. And the allowance which you have made of $1.35 per ton, Mr. Allensworth, is based on the average performance, as I understand it, throughout the city?

A. It is.

Q. Do you have any further explanation in that regard that you wish to make?

A. I think not.

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[fol. 994] The Witness: And so far as I know the engineer of the Company and myself are in agreement on that one item. In other words I figured in all cases a 30 inch cover over the pipe; that is the depth of the pipe is 30 inches below the surface which I believe is the same depth used by the Company in computing its unit costs.

By Mr. Huffman:

Q. Mr. Allensworth——

A. I was about to add—pardon me Mr. Huffman——

Q. Proceed.

A. I was about to add in connection with the differences in inventory quantities that my inventory cost is based upon corrected inventory quantities and to get it in concrete form the total average upon which the Company's reproduction cost is based—that is the reproduction cost of excavation, backfill and tamping, is 427,164.712 cubic yards, but in that total there is the error due to duplication of the paving space, which amounts to, as I have before said, 10,446.09 cubic yards.

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[fol. 995] My reproduction cost from corrected inventories is erected upon a total average of excavation, backfill and tamping of 421,273.402 cubic yards.

The effect of all of these differences is the amount shown in the column titled "Differences" on this page opposite the title "Excavation, backfill and tamping", and is $135,765.99.

Commissioner Geiger: Now, Mr. Allensworth, you have in that element of difference the difference in the inventory but you have not said whether your inventory was larger or smaller than the inventory used by the Company; in the quantity of pipe, you inventory is larger?

The Witness: My inventory of pipe is larger.

Commissioner Geiger: And is it larger in this excavation, or smaller? Where is the difference?

The Witness: It is almost the same if you eliminate the error in the Company's duplication of the paving amount; there is very little difference in the total average including that error.

Commissioner Geiger: Well, then do you duplicate that error by saying that there is an error for paving and then that there is less material?

The Witness: How is that?

Commissioner Geiger: You do not duplicate that error—make it show up twice?

The Witness: No, sir, I do not.

Commissioner Geiger: All right.

By Mr. Huffman:

Q. A part of the error was due to the inclusion of pipe under the wrong classification, was it not?

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[fol. 996] A. Yes, sir.

Q. Which would not leave the same difference in their excavation and trenching?

A. Yes, sir.

Q. Have you told us how much of that difference resulting is due to difference in inventory quantity and how much due to the difference in unit costs?

A. No, for the reason that I have stated the total difference due to various elements of difference, but to make a weighted average effect of all of these differences and just how much in dollars is inventory and how much is these other things would require quite an extended computation which I did not believe would be either necessary or desirable.

Q. Do you have any further explanation in regard to excavation, backfill and tamping?

A. I believe not.

Q. Under the item of "Laying and Joining" you have a difference of $37,952.22 shown in the last column on page 2 of this exhibit. Will you please tell us the reason for the difference?

A. This difference is due to difference in inventory quantities, differences in wage rates and difference to overmanning of public gangs upon which the Company's reproduction cost is erected.

I was about to proceed, that the differences in wage rates could have been explained relative to trenching. There are, however, additional differences in pipe crew wages; for example, the set-up of the pipe crew upon which the Company's reproduction cost is established is different from the pipe crew upon which my reproduction cost is erected.

The Company has, for example, relative to a four inch pipe, which is about the weighted average size of pipe in

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[fol. 997] these mains, the Company, according to this reproduction cost, would have a crew of 14 men, or 13 men I mean, to handle a four inch steel pipe, whereas in my re-

production cost that crew would consist of five men. It is true that the Company with its 13 men would accomplish more pipe laying per day than I would with my five men, and should. The differences obtain both ways; the comparison with my reproduction cost elements, crew organization, the organization upon which the Company bases its cost are overmanned. The various grades of labor in the gangs are in some respects over-rated.

Q. The average rate which you have used for common labor in connection with laying and joining is the same as you have previously explained?

A. Well, it is the same——

Q. For excavation, backfill and tamping?

A. All of my wage rates are based upon a common average rate of 40 cents an hour.

Q. That is the prevailing wage rate for the Columbus area as of December, 1929, is the rate which you have applied?

A. Yes, sir.

Commissioner Geiger: Well, then did you lay and join your pipe theoretically with common labor or expert labor?

The Witness: Oh, much of the work of course is done with common labor but the Company always figures that the work would be largely done with common labor, and that is the fact, that it is so done.

Commissioner Geiger: Go ahead and explain that without any questions.

The Witness: The difference in the common labor wage rate has been explained; there are similar differences in

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[fol. 998]: wage rates payable to skilled and semi-skilled labor. I suspect that the difference in wage rates for skilled and semi-skilled labor may not be so great as the difference in the common wage rate.

By Mr. Huffman:

Q. Does the time necessary for laying and joining pipe depend to any extent upon the size and kind of pipe?

A. It depends very much upon the size of pipe and depends on the kind of pipe as distinguished between cast iron pipe and wrought iron and steel pipe. There should be

no difference in preparation in the performance of the handling of wrought iron and steel pipe of the same size.

Q. You have considered all of these elements in arriving at your unit costs?

A. Yes, sir.

Q. And the unit costs which you have employed are based upon an average performance for laying and joining?

A. Yes, sir.

Q. Do you have any further comment before we pass to the next item, Mr. Allensworth?

A. I believe not at this time.

Q. Under the item "Testing" you have a difference of $2,587.20 plus; will you please discuss that difference?

A. Yes; that statement $2,587.20 plus should be explained to mean that my reproduction cost, the item "Testing" is higher than is the Company's by that amount.

Q. What goes to make up that difference?

A. That difference is due first to difference in inventory quantities, and like other quantities my reproduction cost is erected upon the corrected inventory. Also there is a difference in labor performance and wage rates.

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[fol. 999] The Company's reproduction cost of testing is based upon a greater performance per man per day than is my reproduction cost for this item; consequently my reproduction cost for the item "Testing" is greater than is the Company's by the amount shown, namely, $2,587.20.

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[fol. 1000] Q. The next item, Mr. Allensworth, on page 2 of City's Exhibit No. 58 following "Testing" is the item of maintaining lights, barricades and so forth, in which a difference of $53,288.50 appears. Will you explain that difference, please?

A. That difference results from the fact that I have no directly comparable item in my reproduction cost. This amount here shown opposite the title maintaining lights, barricades and so forth in the amount $53,288.50 is the company's alleged reproduction cost of placing lights, flags, barricades and keeping tools, moving material on the job and hauling men to jobs. For the purpose of this analysis and collation the amount included in the reproduction cost for these several costs are shown opposite the title here appearing maintaining lights, barricades and so forth. As

stated just a moment ago, I have no directly comparable amount in my reproduction cost. Night watchmen, in my reproduction cost, are included in direct supervision and extras. The cost of the use of tools and equipment is included in my reproduction cost in labor overhead charges.

By Commissioner Geiger:

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[fol. 1001] Q. Well, do you mean by that that you have an item covering this in another schedule?

A. No, not in another schedule, Your Honor, but the costs for these various items are included in my reproduction cost as a part of other elements of cost.

By Mr. Huffman:

Q. And those will be explained as you take them up later?

A. Yes, sir.

Q. Under the heading "Installing collar leak claims," a difference of $7,861.64 appears. What goes to make up that difference?

A. This item is the company's alleged labor cost of installing the collar leak clamps. This subject of collar leak clamps has heretofore been discussed in my explanation of City's Exhibit No. 55. There are no collar leak clamp costs in my reproduction cost appraisal; therefore, the difference here shown.

Q. Under the heading "Direct supervision and extras" immediately following this there is a difference plus $45,119.61. Tell us what occasions that.

A. That results from the circumstance that the company has in its reproduction cost no directly comparable item. In my reproduction cost statement, the item direct supervision and extras comprises gang foremen, night watchmen and time keeping and material clerks. As before stated, the company has no directly comparable item in its reproduction cost, hence the difference as here shown of $45,119.61, a red figure; a credit in other words.

By Commissioner Geiger:

Q. Well now, what do you mean by they have no comparable item; have they not covered that in some other item?

A. I think so.

Q. In what other item do you discover that?

A. I think some of it is in the amount here shown as maintaining lights, barricades and so forth.

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[fol. 1002] By Mr. Huffman:

Q. There is no comparable item under that heading?

A. No directly comparable item, no, sir. The fact is, so far as I know, in the company's reproduction cost, in the detail supporting the company's reproduction cost, they have no such item as direct supervision and extras.

By Commissioner Geiger:

Q. Well now, may I ask this; if you have simply allowed $45,119 under the item maintaining lights, barricades and so forth, that would have been comparable in a way?

A. In a way; but only to a degree.

By Mr. Huffman:

Q. That would have covered——

By Commissioner Geiger:

Q. Let me ask this one question. But in your judgment, is there any analogy between their item maintaining lights, barricades and so forth and any item of direct supervision and extras?

A. I don't think there is a direct analogy because of the fact that some of the things that are covered by my direct supervision and extras the company has not in its item maintaining lights, barricades and so forth, but has included in overhead allowance on labor.

By Mr. Huffman:

Q. Well, in considering maintaining lights, barricades and so forth, in arriving at the figure shown here for the difference, have you allowed anything like the amount claimed by the company?

A. Well, in my reproduction cost there are costs that the company has included in what is designated here, maintaining lights, barricades and so forth. However, there are some costs in there to which I have no comparable item anyplace in my reproduction cost. For example hauling men to the job; I have not contemplated that in

my reproduction cost I would furnish transportation for t-ench diggers to get to the job.

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[fol. 1003] Q. And maintaining lights?

A. Lights would be maintained by night watchmen that I have provided in my reproduction cost.

Q. What is the total figure, now, Mr. Allensworth, of difference as found in the last column of page 2 of this exhibit?

A. The total difference of the direct labor items appearing opposite the title, "Total direct labor costs' is $220,917.84.

Q. And what is the total difference in direct material, and labor cost?

A. $319,012.97.

Q. You may tell the Commission concerning the differences appearing on this page relative to allowance and overhead.

A. In the company's reproduction cost there is included in its unit cost under the designation, "Allowances" a total of $126,291.09. This is the company's alleged "Reproduction cost of field foremen, time keeping and material clerks, purchase, loss and use of tools, workmen's compensation insurance, medical examinations, cost of securing labor and property damage." I have no directly comparable item in my reproduction cost, but those costs are provided for generally in other items in my reproduction cost.

Q. What are some of those items to which you refer?

A. My reproduction cost provides for field for-men, crew clerks, that is time keeping and material clerks, the cost of the use of tools, workmen's compensation insurance and property damage and public liability. I make no specific allowance in my reproduction cost for medical examinations, nor do I make a specific allowance for cost of securing labor.

By Commissioner Bricker:

Q. Have you your breakdowns in percentages and the

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[fol. 1004] basis upon which those percentages are estimated, or did you show it in that way?

A. The Company determines the amount by applying a percentage to the labor reproduction cost items, and I explained, I believe, in the discussion of what has been marked City's Exhibit No. 55, that those alleged reproduction costs are determined by applying a 15 per cent ratio to all labor items, and in addition thereto 5 per cent to mechanical equipment.

By Mr. Huffman:

Q. Under the heading: "Overhead on Labor and incidentals," there is a difference of $5,047.96. Tell us of that difference.

A. This difference is due to the fact that the company includes in its unit costs 5 per cent of labor cost plus labor allowance for omissions and contingencies, the total amount being $52,881.37. I have no directly comparable items in my reproduction cost. In my reproduction cost there is included 6.8 per cent of direct labor cost for workmen's compensation insurance, public liability insurance, property damage insurance and tool expense. The total amount in my reproduction cost for these items is as here shown $47,833.41. Now, may I explain in connection with this item that the amount here appearing as overhead and labor is 5 per cent of the total labor cost plus allowances, and that is an inclusion in the company's reproduction cost for omissions and contingencies. I have no directly comparable item in my unit cost; however, as will be explained later, I have in my overhead charges on undistributed construction expenditures an allowance for omissions and contingencies which is in fact larger in proportion and larger in fact than the amount claimed by the company in its reproduction cost.

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[fol. 1005] Q. In overheads on materials, a difference of $53,495 is shown here. You may explain that difference.

A. This difference results from the fact that the company includes in its reproduction cost statement 4½ per cent of the pipe cost and 7½ per cent of fittings for purchasing, incidentals, warehouse, handling and checking and waste and breakage of materials. In my reproduction cost 2 per cent of the cost of the mains including fittings,

is included for purchase and inspection, storage and yard expense. One of the elements of difference is due to the fact that the company makes an allowance in its reproduction cost for waste and breakage of pipes in mains. I make no such allowance in my reproduction cost.

Q. Why do you not?

A. Because it is almost impossible to break a wrought iron or steel pipe by handling it. Secondly, in cutting pipe to meet at the ends of runs or to meet fittings, the end cut off, almost always goes into stock and is used where it would be useful at some other place. In cast iron pipe the chance of breaking a pipe in handling is very little. When such pipe is broken, the pipe is cut clean at the point of fracture and both ends are salvaged, so that the loss, if any, is very, very meager in amount, and is provided for if it occurs in my allowance for omissions and contingencies.

Q. What is the total difference of allowance and overheads for distribution mains as shown on page 2 of this exhibit?

A. $184,834.05.

Q. There appears just below this an item "To balance." Will you tell us what that consists of?

A. Well, preceding the item "To balance" there appears the amounts opposite the title "Total" which amounts are the sum of the previous totals.

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[fol. 1006] Q. Yes. What is that amount? I overlooked that.

A. The amount of the company's reproduction cost is $2,935,083.44; in my reproduction cost $2,431,236.42, the difference being $503,847.02.

The next item "To balance", appearing in the amount $90.84 in the column titled "Company's Reproduction Cost," and in the column entitled "Difference" is as before explained, the net effect of gain and loss resulting from the extension of fractional quantities against the inventory totals.

Q. Well what then is the total difference between the company's reproduction cost and Allensworth reproduction cost for distribution mains?

A. The total difference from undistributed expenditures is $503,937.86.

Q. Directing your attention to page No. 3 under the heading "Services," will you tell us in a general way what this page reveals?

A. On page 3 is revealed a collation of the company's reproduction cost and my reproduction cost of services, which collation is revealed in terms of the details going to make up the respective reproduction costs. Also there is shown in a column titled "Difference" the difference between the company's reproduction cost and my reproduction cost. I direct attention to the first column on this page, namely "Total Services": the same number appears in both columns, both the company's reproduction cost and my reproduction cost. That shows that the company's reproduction cost is based on the same number of services as is my reproduction cost; in other words, there is no difference in this property classification in inventory quantities.

Q. Will you proceed with the material and explain the

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[fol. 1007] differences that occur?

A. Under the general title "Material" the first item is pipe, f. o. b. mill. There is included in the company's reproduction cost for pipe in services f. o. b. the mill or supplier, $82,562.37. In my reproduction cost for this item there is included $82,064.17, the difference being $498.20. This difference is due to the fact that the company prices pipe in services at a price per foot that includes mains, valves and fittings. In explanation of what the company did, after determining the price of pipe in mains, the company adds to the pipe cost of mains 5 per cent for fittings in mains, which fittings apply to L's, T's, crosses, valves, unions and such kind of materials. Having determined the price of the pipe in mains plus the cost of fittings in mains, it uses, as the cost per foot of pipe in services, the cost of the pipe in mains plus the cost of the fittings in the mains. The result of that is that there is an excess in the company's cost of pipe in mains in the amount of $498.20. My cost of pipe in services is the same per foot as the same pipe is classed in the mains classification.

Q. What is the fact concerning the various items of difference as they appear under "Material" there; is that same explanation practically applicable?

A. The next item, freight——

Q. Yes, just give us the difference and explain about it.

A. Shows a difference of $68.17, which shows that I have included in my cost of services $68.17 more than has the company included in its reproduction cost for freight on the materials entering into the services. This is due to the fact that the company has underpriced freight on the

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[fol. 1008] pipe by that amount. I suspect that it is due to the fact of not carrying out decimal points in extension. The same basis freight rates were used by the company as used by myself, the same number of feet of pipe and the same kind of pipe. That error is either arithmetical or as I have just suggested.

Q. Then the sub-total appearing there is simply the total of the two figures directly above?

A. That is the sum of the two previous figures.

Q. Will you please explain the difference appearing under the heading, "Fittings and valves"?

A. The next general item appearing is fittings and valves, and under that appears the statement of the fittings detail, and at the bottom of that group will be found total fittings and valves; the amount of difference being $1,554.11. This difference is due to the fact that the company, in developing average quantities of fittings per service for the various fittings used in the construction of services, through lack of precision in applying material prices to these average quantities per service, overpriced the fittings in the amount of $1,554.11.

The next item, "Total direct material cost," the difference appearing——

Q. That is the material cost of services?

A. Yes, material cost of services: the difference being $1,984.14, or the sum of the preceding differences.

By Mr. Butler:

Q. Mr. Allensworth, I again want to ask you what I asked you about the freight, now as to these services, the material including the freight; is there any difference between the company's basic prices and yours?

A. No, sir.

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[fol. 1009] By Mr. Huffman:

Q. You have used the same prices for fittings?

A. Yes, sir.

Q. There appears as the next item, "Installation cost," and under "Equipment", the difference of $6,152.74. Discuss that difference.

A. This difference arises from the fact that the company estimates that with a service line crew of 17 men the installation performance of services would be 12-.482 services per day. My reproduction cost for services is erected upon a service line crew of 15 men, installing 14 services per day. This difference of $71,127.62 for the difference in the total labor cost of services is due largely to the circumstance relative to service line crews as just stated. There are other differences in wage rates, in labor allowances and overheads in the unit costs. These differences in allowances on overheads in unit costs in the company's reproduction cost and in my reproduction cost have been explained in my explanation of the differences in the reproduction cost of mains. The same differences occur in services, and amount to, as here shown, a total difference on services of $16,139.85. And begging your pardon, Mr. Huffman, for proceeding ahead of your question, those various groups should, I think, be discussed together, and that is why I went beyond your specific question.

Q. What is the total direct material and labor difference then on services, Mr. Allensworth?

A. $73,111.76.

Q. There appear under the heading, "Allowances and overheads" certain differences as shown in the last column on the right; will you tell us wherein those differences arise?

A. Yes; that is the difference that I just explained.

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[fol. 1010] Q. That is the $16,139.85 total?

A. Yes, sir.

Q. Under the heading, "Reproduction cost" we have a difference of $89,251.61. Tell us what that consists of.

A. That is the sum of the previous difference items.

Q. Return to page 4——

By Commissioner Geiger:

Q. Where did this item of 89,251 or any of the last items on page 3 as they appear in your page 1—do they appear in that form on page 1?

Mr. Huffman: They are carried back to page 2, are they not, Mr. Allensworth?

The Witness: They appear in page 1 in the amount shown opposite "Services," and the amount of difference there shown is $89,252.51; and the amount here shown on page 3 is $89,251.61. There is a 90 cent item to balance, the kind of a to balance item heretofore explained in relation to other accounts, which balances these two figures.

By Mr. Huffman:

Q. On Page 4 of this exhibit under the heading "Meters," Mr. Allensworth, we find at the head of the first two columns certain numbers which I wish you would explain.

A. The first item, number of meters, 25,453, appears both in the column titled "Company's Reproduction Cost" and in the column titled "Allensworth's Reproduction Cost." This shows that there is no difference in inventory quantities of meters, and that the company's reproduction cost of meters and my reproduction cost of meters is based on the same inventory quantities.

Q. Now, under the heading, "Meters" appears little or no difference, is there?

A. There is no difference. The small amounts in the third column are not differences in fact; those are varia-

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[fol. 1011] tions due to the extension of small decimal quantities.

Q. Under "Installation Cost," equipment, labor and direct supervision there appear certain differences in the last column which I wish you would explain.

A. The differences in installation cost, equipment and labor cost; the first being $23.74 and the second being $24.61; those amounts are in fact not differences; those are variations due to extension of small decimal quantities.

Q. Under "Direct Supervision" there appears a difference of $5,615.13. What is that?

A. That shows that in my reproduction cost I provide for a meter foreman or a foreman to supervise meter installation, and the company has no directly comparable item in its reproduction cost; and that doesn't mean that the company doesn't provide for meter foremen in its reproduction costs. The company does, but the provision is made in different accounting, so that the item there shown as a red

figure or credit should be taken in consideration with the further detail on this page.

Q. Under the heading "Total direct labor cost of materials," you have allowed how much for that to the company?

A. $5,567.78.

Q. What is the total direct labor and material cost, and the difference appearing here for materials?

A. The total direct labor and material cost in the company's reproduction cost if $434,076.49. In my reproduction cost $439,644.74; the difference being $5,567.98.

Q. Well, that is all explained above, is it not?

A. It is.

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[fol. 1012] Q. And it results in an allowance on your part of more than has been allowed by the company?

A. To that point in the discussion yes.

By Commissioner Geiger:

Q. Where does that appear on page 1, if at all?

A. That will not appear on page 1. The amounts at the bottom of the page will—

Commissioner Geiger: Yes, I see, all right.

By Mr. Huffman:

Q. It is a part of other figures appearing on page 1, is it not, Mr. Allensworth?

A. It is.

Q. There appears here next "Allowances and overhead charges"; there is a difference in amount for labor allowance appearing in the last column which I wish you would explain.

A. That difference $4112.73, arises from the fact that I have no directly comparable item in my reproduction cost. The amount here shown in the company's reproduction cost in labor allowance is to a degree comparable to the amount shown opposite direct supervision in my reproduction cost in the amount $5,616.13. This item, "Labor allowance" in the company's reproduction cost of meters does provide for foremen and other like items.

Q. Overhead and labor, incidentals; there appears a difference in the last column which you may discuss.

A. The next item overhead on labor, incidentals, is due to the fact that the company includes in its reproduction cost of meters 5 per cent. of labor cost——

Q. That is 5 per cent. on the total labor cost?

A. Yes, for omissions and contingencies; and as heretofore explained, I provide for omissions and contingencies in my undistributed construction cost. The amount appearing

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[fol. 1013] opposite this item in the column entitled Allensworth's Reproduction cost $446.19, is in fact the cost of Workmen's compensation insurance on meter installation labor, and the difference is as here revealed, $1210.16.

Q. Now, on overhead on material, purchase, inspection, storage in yard, breakage loss and waste, there is a difference in the last column on this page which you may discuss.

A. The difference in the overhead charges on material is $10,136.57. This difference is due to the fact that the company makes a charge of 4½ per cent. on materials and 7½ per cent. on connections to cover this charge. The amount included in my reproduction cost for purchase, inspection, storage in yard, breakage, loss and waste is 2 per cent. on meters and 3 per cent. on connections.

Q. What then is the total allowance and overhead for services?

A. The total difference is $15,459.45 which difference has heretofore been explained in my discussion of the previous items.

Q. What is the total cost of labor and material as they relate to services?

A. The total difference is $9,891.48. Practically all of that difference is in purchase, inspection, storage in yard, breakage, loss and waste, and as before mentioned, the company's factors for those charges, 4½ per cent. on meters and 7½ per cent. on connections; in my reproduction cost the allowance is 2 per cent. on meters and 3 per cent. on connections. This total difference here appearing in the amount of $9,891.48 is, of course, in fact the sum of the preceding differences. The next item——

By Commissioner Geiger:

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[fol. 1014] Q. That is due to the fact that you have allowed in one place more than they and subtracted that amount from the $15,000?

A. Yes, sir, that is correct.

The next item "Orifice meters" are two orifice meters, the reproduction cost of which is accepted and included in my reproduction cost and the cost of which is not analyzed.

By Mr. Huffman:

Q. Then the figure which you have just given in the amount of $9,891.48 is the total difference between the Allensworth reproduction cost and the company's reproduction cost of materials?

A. It is.

Q. Those figures are all carried forward in total and are found on page 1 in your set-up of this exhibit?

A. Yes, sir.

By Mr. Butler:

Q. Mr. Allensworth, is it true that the company and the city agreed on the basic unit prices for all materials in the mains and services and meters, including freight, except that matter of $3.00 per ton for freight on pipe?

A. As to basic material prices, yes, sir, there is no difference.

By Mr. Huffman:

Q. Do you have any further comments to make on City's Exhibit No. 58, Mr. Allensworth?

A. I think not at this time.

By Commissioner Geiger:

Q. Let me go then to page 1; you have the total of the company $5,370,489.22. You have no figure opposite that, but I assume that you carried down your figure above, $2,991,370.34?

A. That amount you just read, Your Honor, $3,991,260.34 is the sum total of my reproduction cost for these items, and is comparable to the amount appearing opposite that in the column headed "Company's Reproduction Cost,"

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[fol. 1015] which amount is $4,702,458.04. The Company in its reproduction cost appraisal adds a 10 per cent. factor for going concern value, and the going concern value therefore assignable to mains, services and meters would be

the amount here shown $470,245.80. I have no such item in my reproduction cost. And the next item, "working capital inclusive of allowance for materials and supplies," the company applies a 4 per cent. plus factor against its reproduction cost items to produce the working capital that they claim, and therefore the amount of working capital assignable to this classification of property would be that amount shown here $197,785.38, whereas in my reproduction cost by working capital amount is determined entirely independent of reproduction cost amounts in this classification of property. It is an independent determination, that is a determination independent of reproduction cost, as to the working capital requirements.

Q. Well your working capital is included in the figure $3,991,000?

A. No, it is not; it is not.

Q. Well, would it help us to understand your figures to put your working capital opposite their working capital?

A. I don't think so. Then in that case the amounts would not be comparable.

Q. Let me ask you this; I don't get it clear in my head, and I am sorry I am so dumb about it. You have here the figure $3,991,270.34. Is there anything more to be added to that figure, according to your estimate?

A. For what?

Q. For anything?

A. Yes. This is only part of the property. This is confined——

Q. Wait a minute; for anything that they have included

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[fol. 1016] in their figures on page 1?

A. No, sir, I have no further comparable items. I have working capital in my reproduction cost, but it is in no sense——

Q. All right.

A. Comparable to the Company's working capital.

By Mr. Huffman:

Q. Well, Mr. Allensworth, the $470,245.80 set forth here for going concern, and the $197,785.38 for working capital under the company's reproduction cost column or in the company's reproduction cost column, is not the total claim

of the company for going concern and cash working capital?

A. It is not.

Q. This is only that part which is allocated to mains, services and meters so to speak?

A. Yes, sir.

Mr. Turner: Allocated by whom, Mr. Huffman?

Mr. Huffman: By Mr. Allensworth.

Mr. Turner: Just so we understand it.

Q. Mr. Allensworth, I direct your attention to what has been marked for purposes of identification as City's Exhibit No. 59 and ask you to explain generally what that is.

Mr. Turner: The record may show we were just handed a copy.

The Witness: W— has been marked City's Exhibit No. 59 is a statement of a reproduction cost new less depreciation of the distribution property of the Columbus Gas & Guel Company for service within the city of Columbus as

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[fol. 1017] of December 31, 1929.

Q. This is your reproduction cost less depreciation?

A. Yes, sir.

Q. On page No. 1 of this exhibit under "Distribution system property," you may explain the first item, 228, land. And the first item land; reproduction cost is shown in the amount $23,150; no depreciation. The reproduction cost less depreciation is shown in the same amount, namely $23,150 for the reason that I make no deduction for depreciation of land.

Q. That is the same as the company's figure?

A. That is the same as the company's figures for that item, yes, sir, excepting——

Q. And your right-of-way account No. 230——

A. Pardon me.

Q. Is the same thing true?

A. Pardon me; I didn't complete my former answer as to the corrections heretofore discussed.

Q. Account No. 230, rights-of-way shown in your reproduction cost new less depreciation of property, there is no difference also, does it not?

A. No, there is no difference.

Q. No depreciation is deducted for depreciation of right-of-way in the amounts here shown of reproduction cost?

A. Reproduction cost less depreciation is the same as appears in the company's appraisal.

Q. Under account 231, district regulator structures; what depreciation figure have you allowed?

A. I have deducted from the reproduction cost of dis-

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[fol. 1018] trict regulator structures the amount $1097, making the reproduction cost less depreciation $9,601. This amount deducted is the company's depreciation of this item, and is one of the acceptances that you have read into the record.

Q. Account 232, measuring station structures; what depreciation have you allowed?

A. On measuring station structures I have deducted for depreciation the amount $238, which is the company's estimate of the depreciation and is one of the acceptances you read into the record; the reproduction cost less depreciation being $14,630.

Q. What depreciation have you allowed under account 233, district regulator?

A. $1205. This also is the company's depreciation and is one of the acceptances you read into the record. The reproduction cost new less depreciation becoming as here shown $30,095.

Q. In your account No. 234, distribution line equipment; what depreciation have you allowed in mains?

A. On the reproduction cost of mains I have deducted $630,746 for depreciation, which makes the reproduction cost less depreciation $1,750,490.

Q. In arriving at the depreciation for the hidden plant or buried pipes, have you used age or observation as the basis of depreciation?

A. I have studied the age of the property; I have applied my knowledge of the conditions under which that property exists.

Q. Will you explain age consideration as against observation as a means of determining the per cent. of depreciation of hidden property?

A. In the case of property like gas mains, it is a practical impossibility to inspect enough of the pipe to indicate

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[fol. 1019] the condition of all of the pipe. The company, as I understand the testimony of witnesses in determining the amount of depreciation accrued on mains, inspected a total of 1500 feet of pipe or thereabouts. There is actually in round numbers——

Mr. Turner: This is just mere argument; we object. It doesn't answer the question at all; just getting up an argument to put in the record.

Mr. Butler: I don't see how you can discuss such things——

Mr. Huffman: If that is the case the company's witnesses spent a great many days in argument before this Commission.

Mr. Turner: They did nothing of the sort.

Commissioner Geiger: Proceed gentlemen.

Mr. Turner: Are we overruled?

Commissioner Geiger: You didn't make an objection.

Mr. Turner: I thought I did.

Commissioner Geiger: No, you just made an expostulation; at least that is all I heard.

Mr. Turner: Well, pardon me. If we have no objection put one down now.

Commissioner Geiger: Read the question.

(Last question read.)

Commissioner Geiger: That you object to?

Mr. Turner: No, I object to the statement only as not responsive to the question; a mere argument.

Commissioner Geiger: What did Mr. Allensworth say to which you object?

(Answer read.)

Commissioner Geiger: I think or we think, rather, he may

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[fol. 1020] properly explain the difference between his method of ascertaining depreciation as against the company's method if he wishes to, or first explain his method and then explain wherein that is different and superior in your judgment to the company's method.

Mr. Turner: I think that has been done.

Mr. Huffman: I think so. That is the way we were proceeding.

Commissioner Geiger: Well, don't cover it again if it has been covered once.

Q. Mr. Allensworth, certain witnesses for the company have testified that some 392 inspections of the buried pipe of this property was made in and outside the city for the Columbus Gas & Fuel Company. Now, in your opinion as an engineer, based upon your experience, do you believe that to be a sufficient inspection to give an adequate knowledge of the condition of the gas pipes in this city?

A. No, I do not, for the reason that those inspections uncovered a total of about 1500 feet of mains. There are 2,200,000 feet of mains in round numbers in the inventory, and the observation then was only about 7/100 or 1 per cent. of the mains in the system. Expressing it another way, there is only about 3½ feet per mile of mains approximately uncovered. That, in my opinion, is far from sufficient to give one an adequate picture of the condition of all of the pipes in the system.

Q. Have you considered age alone in fixing your depreciation of these gas pipes?

A. No, I have not. I have considered age, I have considered the conditions under which the mains exist in the ground, in the Columbus soil, and I have considered all

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[fol. 1021] relevant facts in connection therewith.

Q. So you have used the inspection method——

Mr. Turner: We want to strike out "all relevant facts." Let him tell what they are: I have tried to have a minimum of objections——

Commissioner Geiger: Well, I am trying to get at what you are objecting to. He, as an expert, is saying why in his judgment there were not enough facts on which the other experts based their opinion. Is that correct; is that what he is doing? The motion to strike out is overruled.

Mr. Turner: Note an exception.

Commissioner Geiger: We are very glad to give you all the things you are entitled to, Mr. Turner.

Mr. Turner: I appreciate that very well; I realize it. I want to make a minimum of objections, but I think there is some——

Commissioner Geiger: He is an expert, as I understand it, and has a right to express his opinion as to the opinion expressed by some other expert.

Mr. Turner: He is talking about "all relevant facts". Now, what are the relevant facts?

Commissioner Geiger: Well, I think he has given enough there, probably. The main thing is to the effect that the inspection of the pipes, a short section of pipe in a long section, is not sufficient on which to base a sound judgment. When it comes to an expression of his own opinion, you can cross examine him to the fullest extent on that. All right, what is the question?

Q. Mr. Allensworth, you have had an opportunity to ob-
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[fol. 1022] serve the sections of pipe of this company at various times, and are familiar with the underground system, are you not?

A. Yes. My observation of this company's property extends over a period of 25 or 30 years.

Q. And in the recent years, have you had an opportunity to see certain sections of this pipe?

A. Yes, I have. I have exercised what opportunity has come my way to observe the mains of this company when they were exposed to view.

Q. Give us some idea of the extent of that, will you please?

A. In the last few years——

Commissioner Geiger: Just a little louder, Mr. Allensworth.

The Witness: In the last recent years, particularly, I have made special trips to make some inspections of the mains of this company. Openings were made. I observed the main if I remember rightly, in the alley east of Fourth Street and just north of 15th Avenue where there had been an accident due to gas leaking from the main. I looked at that main when it was uncovered. There were holes in the pipe. I examined the pipe at the corner of Lynn and Pearl Street when that pipe was uncovered, due to the fact that there had been an accident resulting from gas leaking at that point. I observed the condition of the pipe and observed the kind of repairs made by the company on the pipe. I examined a considerable streteh of pipe in Wall Alley between State and Town Street when that pipe was uncovered.

By Commissioner Geiger:

Q. A considerable stretch doesn't mean anything. Was it a hundred feet or what?

A. On that particular piece there was about 150 feet

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[fol. 1023] exposed. There was an excavation made for the purpose of revealing certain facts in connection with mains in West Main Street a few years ago. I observed that excavation, and observed the mains there uncovered. Those are specific instances where I went particularly on the mission of looking at mains of this company. There have been a number of instances, how many I cannot say from my memory, where pipe has been uncovered, and almost subconsciously whenever a piece of pipe or underground work is uncovered, I look at it. I guess it is a part of the urge of an engineer to look at those things. And through the years prior to that I was for 12 years the city electrician for the city of Columbus, Ohio; my specific title was superintendent of fire and police telegraph; and as a part of my responsibilities in that position I had general supervision of the issuance of permits to public utility companies to excavate for conduit work. I had supervision of the issuance of permits for erection of pole lines. During that work I made a number of excavations for the city in the work that I was conducting, in constructing conduits for the fire and police telegraph system. They were scattered throughout the city, and in all cases where trenches were opened, it was a part of my duty to be at the trench at the time it was opened and observe the conditions at the trench; and in those cases, in a great number of cases, gas pipes would be uncovered; and as a part of my attitude of an engineer, I always noticed the conditions of things, as I do yet. I feel that I am as familiar with this system of mains as any person could be, not being actively on the payroll of the gas company. Of course, those men see many more mains than I do as far as mere observation of them

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[fol. 1024] is concerned, but conclusions they may reach from their observations may be different from the conclusions I might reach.

By Mr. Huffman:

Q. Weren't a number of segments actually cut from the pipes of this system and brought into court in 1925 in a

case in which you had an opportunity to study both the exterior and interior of those sample pipes?

A. Yes; if I remember correctly, there were 55 samples brought in by the company. There were samples that I presented in evidence before the Master in addition to those brought in by the company. The samples that I presented in evidence before the Master showed pipe in the last stages of decay, pipe with holes in them, to show the Master that all of the pipe was not good pipe, that they did have some leaky pipe in the system.

Q. Then in fixing your per cent. depreciation you have taken into consideration your knowledge and experience in connection with the properties of the Columbus Gas & Fuel Company?

A. My knowledge of this particular system, my experience in the Columbus territory, my knowledge of soil conditions of Columbus, and the age of the pipe as it now exists in the system.

Q. Well, would you have used the inspection method of the underground properties of the Columbus Gas & Fuel Company if it had been physically possible to inspect so much of it as would have given you an intelligent estimate of the physical condition?

A. I would have inspected the pipe, yes, sir; but when you say would I have used the inspection method, if you are referring to the method of depreciation determination by witnesses for the company, no I would not have used

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[fol. 1025] that method. I would have made the inspection, as I did make an inspection of practically all of the property of this company that was observable; that is regulator station, regulator structures, measuring stations, et cetera.

Q. But is it physically possible to make an inspection to such an extent that you will have an intelligent estimate of the physical condition of property of this nature?

A. It is not—not practically possible. It is physically possible, but it is not practically possible.

Q. Are you acquainted with soil conditions in and around Columbus generally?

A. I am.

Q. Will you tell us the effect of soil on pipe buried in the ground?

A. The soil surrounding your pipe in the ground is a deteriorating influence. The soil of Columbus is a deteriorating influence on the mains.

Q. Are the soils here of an alkaline or an acid nature, Mr. Allensworth?

A. They are both.

Q. Well, tell us what the relative effect of these soils are on pipes.

A. That is the relative effect of acid soils and alkaline soils?

Q. Yes.

A. I shall be pleased to address myself to that subject, although the answer may not be relative effects, because there are no relative effects. There is a popular misapprehension that acid conditions in soil has a great deteriorating influence on iron pipe in the ground than does an alkaline soil. That is not true per se, that is by itself considered that is not true. It is a question of degree. A stronger alkaline condition may be more destructive to iron than an acid condition of less intensity. The fact

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[fol. 1026] is that in the experience of this particular Columbus Gas & Fuel Company one of the instances of the most rapid deterioration of pipe was caused by alkali. That was salt water dripping out of a refrigerator car, went down into the ground, destroyed a pipe, a main, caused a gas leak, blew up a store here on North Front Street. The fact is that the deterioration of pipe in the ground is due to moisture in the soil. Dry soil, absolutely dry soil whether it is acid or whether it is alkaline would have no effect whatever on the pipe. Bake a piece of ground and put it in contact with a piece of pipe and the effect would be nothing; there is no deterioration of pipe without moisture—that is I am speaking of the general condition in the ground. A deterioration will occur if the moisture is present if it is over the ground; it don't have to be in the ground if the moisture is present for the deteriorating influences to make themselves manifest.

The fact is that pipe, and I am speaking of iron pipe, deteriorates through what is known to physicists as electrolysis. The electrolitic action was discovered, if I remember rightly, by an Italian physician by the name of Galvani in about the year 1746, and from his name is derived

the words galvanic action. Electrolysis, as distinguished from stray current electrolysis, is sometimes known as galvanic action.

Volta, one of the pioneer experimenters and researchers in electrical phenomena closely following the discoveries of Galvani discovered the laws of electrolysis, and the word electrolysis was coined by Volta, and the literal interpretation of it means electric analysis; so that the laws of electrolysis and the effects of electrolysis on metallic struc-

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[fol. 1027] tures has been known for a couple of hundred years or more.

This electrolitic effect can only be present where there is an oxidizing agent and a material that is subject to oxidization, and the electrolysis of itself requires the presence of an electrolite. An electrolite is a fluid containing oxygen. It is water mostly; commonly water mixed with some other chemical.

The soil of Columbus, and the soils of other places, has always present more or less moisture: Now, the soil may be acid or it may be alkaline; either condition presents an electrolite. Acids are electrolite as are alkalis electrolite.

By Commissioner Bricker:

Q. What if the soil is neutral as to its acid or alkaline content?

A. It is not a question, Your Honor, of whether or not the soil may be neutral, alkaline or acid. It is a question as to whether the moisture in that soil is alkaline or acid.

Q. You could still have rusting, if there were no alkali or acid either in the soil or in the moisture of the soil?

A. If you had moisture, because it is impossible to have moisture in the ground that is not either alkaline or acid.

Q. Oh, I see.

A. May I direct your attention to the fact that the most powerful primary batteries are built with an alkaline electrolite. The common, dry cell of commerce is an alkaline electrolite. The primary cells, that is the so-called batteries in popular parlance are made with an alkaline electrolite, namely, the Edison cells, and using caustic soda,

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caustic potash as an electrolite. And in the dry cell

you have a solution of an alkaline content held in a [fol. 1028] paste by an inert and neutralizing vehicle, namely, plaster of paris, which meets the condition as to the question raised just now by Your Honor; can you have electrolitic action in a neutral soil. You have it in dry soil; you have a neutral soil, the plaster of paris that makes the paste, and yet you have an electric action.

Now, I do not happen to remember of any electric cell or primary battery that ever gained very much favor in commerce that was constructed with an acid electrolite.

In the soils here in Columbus we have certain conditions that are contributive to acid conditions in the soil, namely cinders. We have a condition of soft coal smoke, the rain percolating the smoke, dropping on roofs that are covered with the residue of coil smoke, accumulates more or less acid before it goes into the ground. The cinders that have been placed in alleys and under sidewalks in years past, although the practice is to almost entirely eliminate it now, still contains sulphur, and there is a leaching process whereby the water percolating through those cinders becomes acid. Further than that we have shale formation in Columbus, that contains acid, and we also have wide stretches of the city where the predominating influence of the soil would be alkaline, no question about that. We also have other strata in the city where the soil would be neutral as Your Honor just inquired about; for example, at the—at a location surrounding the corner of Oak Street and Grant Avenue, you get very far down in the ground you will find a nice, clean, yellow sand. The sand is largely silica, chemically inert, neither acid nor alkaline; yet the

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[fol. 1029] pipe in that sand does rust. We also have gravel formations in the city that would be of themselves very largely, if not exactly neutral, but the deteriorating influence in the soil is determined by the amount of moisture in the soil.

Now, I would like if I may, to explain just what happens between this iron and the electrolite and what causes the disintegration of the iron when this moisture comes in contact with it. As before stated, an electrolite is a fluid that will conduct electricity. It was Galvani, the Italian physician that I referred to a while ago, who discovered that two dissimilar metals, when placed in contact, become

what is known as an electrical potential couple; that is there exists when the two metals come in contact an electrical potential. Electrical potential is the force that causes a load of electric current. These pipes are composed of so-called iron or steel, either cast iron or wrought iron or steel. The structure of that metal is that there are iron molecules and there are carbon molecules; they are in contact, and they constitute an electrical potential combination. When an electrolite comes in contact, that is moisture comes in contact with that pipe, the iron molecule being electrically positive to the carbon molecule, the current flows through the iron molecule to the carbon molecule; in other words, they try to equalize their difference of potential. With this load of current, there occurs the phenomenon known in the older text book as the transmigration of ions; in the present day parlance, that would be the fluctuation of electrons, which is a smaller division of a molecule. At the same time the electrolite itself is disintegrated and oxygen

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[fol. 1030] is released in a free state and collects on the point of the positive bowl, that is the iron. Hydrogen is released and collects on the carbon. The result of that is the oxidization of these free ions of iron, and it appears on the surface of the iron as rust; and that is all there is to the chemical action of pipe in the ground. It always obtains; it goes forth from the time that the pipe is placed in the ground until it is entirely disintegrated unless it is removed, excepting, of course, it may be staved off by insulating the iron from this electrolite by some insulating cover, like some compounds of asphalt, cold tar or like substances.

If there is no oxygen in the line surrounding this pipe there will not be any electric light, and there will be no load of current, and there will be no iron rust. For example, you put a piece of pipe in oil and it will never rust; that is the reason for it. If you had oil in the soil surrounding this pipe and if the oil would stay there and never be washed away, the pipe would not rust. If you would cover it with alcohol, which also has oxygen, by the way but not agree, but there are many, many liquid compounds that will not contribute to rust, whereas water compounds do; and the moisture in the oil is water.

By Commissioner Bricker:

Q. Does that action take place as between something less than what we have always known as the atom?

A. Yes.

Q. Between the subdivisions of the atom and the oxidizing element?

A. Yes, if I understand properly what you mean.

Q. I don't understand definitely chemical terms.

A. Those terms in popular discussion are largely comparative.

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[fol. 1031] By Commissioner Geiger:

Q. As I understand you to say that electrolysis might take place between a molecule of iron and a molecule of carbon, might in itself result in the destruction of iron?

A. It does result in the destruction.

Q. But it must have moisture?

A. There must be moisture present.

Q. Well, do you mean to say then that in iron pipe laid in the free atmosphere, but permitted to get a little moist, and without contact with soil, would itself rust?

A. It does.

Q. Well, I guess it does.

A. Perhaps your own observation will indicate that.

By Mr. Huffman:

Q. What is the fact, Mr. Allensworth, as to practically all of the system of mains, various pipes of the Columbus Gas & Fuel Company; do they come in contact with moisture or do they not?

A. They do.

By Commissioner Geiger:

Q. How do you know?

A. I know that from first my basic knowledge that unless the soil is taken out and dried by artificial means it always contains moisture. There is capillary action of the soil, that is the ground water in the soil, and it is always present. We may refer to a dry soil, and it may look dry; but if you analyze it very carefully you will find that there is some moisture.

Q. May I ask then, just as a general question, assuming that a street is paved with an impervious covering either of asphalt or water-proof brick, and with proper gutters and graded streets and things of that sort; will there enough water get from the adjacent land to moisten that soil that is directly under the roadway to a point where it might reach the pipe?

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[fol. 1032] A. Yes, sir; and that covering over the pipe may be to some extent protective in that the moisture surrounding the pipe would be less; on the other hand it may contribute to more rapid deterioration because of the fact that covering that much surface with an impervious covering might accentuate the flow of ground water and it might get more moisture under the pavement than otherwise.

Q. Well, that would be so, I presume in a place where the hard surface of the roadway would not properly conduct the water off; but taking it in an improved city where there are sidewalks and sewers and storm sewers and things of that sort, would there be enough moisture seeping from the exposed ground to moisten that soil under the roadway that is 50 feet wide?

A. The proof of that, your Honor, is that it does. Every opening that is ever made, even under the most extreme conditions, will reveal that there is moisture in the ground.

By by Huffman:

Q. Certain witnesses for the company testified relative to analyses of Columbus soil which had been made, and one witness, I believe testified that 58 samples of soil were used. What is your position in regard to that number of samples being sufficiently representative as to give a proper basis for complete conclusion as to the acidity of alkaline nature of Columbus soils generally.

A. It is my opinion — is nowhere near sufficient, for the reason that I can go—I don't know where these samples were taken—and if there was only 58 samples taken in Columbus, I can go out and take one or two samples and add to those samples and change materially the results of the analysis.

Q. Well, a proper sample is an average of the mass, is

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[fol. 1033] it not, and is sufficient only when additional samples would not change the result?

A. That is correct.

Q. Well, is there in your opinion any showing or any reason to conclude that more soil samples taken from the city of Columbus for the purpose of analysis would not have changed the result?

A. There is no indication that a greater number of samples would not change the result.

Q. Have you observed the effect of stray current electrolysis in the city of Columbus?

A. Yes.

Q. Will you tell us what you have found in that regard?

A. In years past I have made electrolysis surveys of Columbus to determine the amount of and the location of stray current electrolysis. I am of the opinion that stray current electrolysis to a very great destructive degree does not exist in Columbus, nevertheless, it is always more or less present and must obtain to some degree however slight.

Q. Where is the point at which the most effect is noticeable upon the pipe for example that has come in contact with stray current electrolysis; is it where it comes into the pipe or leaves the pipe?

A. There is only one place where the destructive action takes place, and that is where the current leaves the pipe.

Q. A number of witnesses of the company have testified concerning pitting. Based upon your experience and knowledge of what you understand the term pitting to include, tell us of its effect.

A. Well, if I understand the term pitting correctly, it is a spot in the pipe by electrolysis — has progressed to a greater degree than it has in the service of the pipe im-

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[fol. 1034] mediately surrounding it, and appear in the form of a pit or depression, a hole so to speak in the pipe.

Q. What have you to say in that connection as to the statement that pipe gets worse slower?

A. That entirely depends upon the condition surrounding the particular pipe and the causes of its deterioration. For example, if you surround a pipe with ground saturated with salt water, common, ordinary salt water, the deterioration is very apt to be more rapid. On the other hand, there are conditions under which the deterioration as the electric action progresses, would become less. In that connection it has been stated by one of the witnesses for the company,

I don't remember which one, that pipe as a general thing, as a general matter, deteriorates more rapidly at the start of deterioration or disintegration, and then deterioration progresses less rapidly; or to use the words just spoken by you, Mr. Huffman, it gets worse slower. If that is so, assuming that it is so, that fact proves the straight line deterioration of mains if deterioration is taken on the age basis.

By Commissioner Bricker:

Q. Just a minute. In some places then the action would be separated as if it were a sponge, I believe as described by one of the witnesses, holding water about the pipe, and in other cases, as if it were a scale excluding the moisture from the pipe; you mean by taking a straight line method the whole would average up, it would be dependent upon the age on the average or over all of the system.

A. That is one of the conditions, Your Honor; but I think more important the fact is this, that in considering deterioration of these mains, we have got to consider the

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[fol. 1035] deterioration of mains, some of them laid a good many years ago, some of them were laid just a few months or maybe a few days prior to the date certain of this appraisement; so that if assuming they have a piece of pipe in this system, every foot of pipe in the system was deteriorating at a rate that was more rapid in the beginning of the deterioration and less rapid at the end of the deterioration, the average of all those curved lines becomes a straight line, and it is inescapable because you have got the average of those curved lines over the years starting with the laying of the first pipe in this system, so that while this pipe that was laid just a year ago is in the period of deterioration so to speak where it is rapid, the one that was laid 30 years ago is in the period of deterioration where it is less rapid. If these statements be accepted as being correct, and the way the pipes are added to a system such as this, those balance out and all those curves will average into a straight line.

Q. Then would it be true if there were certain conditions wherein the deterioration might be progressively separated?

A. Yes.

Q. That is I mean become more rapid toward the end?

A. Sure.

Q. The curve becomes sharper?

A. It would be then averaging a curve in the opposite direction. Now, if all of the pipe was all laid on the same date or close to the same date, and if at the end of five years, 10 years, 15 years, the amount of accrued depreciation were to be determined, then it might reveal itself into lessened depreciation in proportionately at the end of the life than it is at the beginning; but that is not the way this

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[fol. 1036] gas property has been built.

By Commissioner Geiger:

Q. Do you know, Mr. Allensworth, from your personal observation of any considerable section of pipe in the City of Columbus within recent years that had to be taken up because of electrolysis or depreciation or worn out condition?

A. There have been a number of instances where the pipe had holes in it, and it had to be——

Q. Plugged?

A. Were either plugged or replaced. In the case of the corner of Lynn and—

Q. Well, never mind. I appreciate all that, but I wanted to know whether there was any line anywhere——

A. Any long line?

Q. That got so bad that they had to take it out and replace it?

A. I don't remember any. There may have been.

By Mr. Huffman:

Q. Are you familiar with what is known as fatigue of metals?

A. Yes, sir.

Q. Will you tell us what, if any, effect fatigue of metals may have on the Columbus System?

A. Fatigue of metals is known to the physicists as a natural force that gradually deteriorates the metal to the point where it will fail under stress. It is a force that is constantly in action, and obtains in the case of the pipes in a distribution system such as this. There is a popular misapprehension in that connection that fatigue is due only

to internal pressure of the pipe pressing on the wall of the pipe and pending to burst it. That is not so. However, that would be an effect if the pressure would be great enough and maintained under varying conditions over a sufficient term of time; but the stresses and strains that come on these mains in this system are due to changes in

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[fol. 1037] temperature. Here is a great long pipe, and the temperature in the ground varies from winter to summer, and there is a tension stress sometimes on pipe, and there is a compression stress at some time. Now, to whatever extent those stresses and strain affect the pipe itself, that is known to the physicists as fatigue. We do know that it is force. We do know that it is in constant application.

By Commissioner Geiger:

Q. Well, don't you know, Mr. Allensworth, that it is so minute in its progress that it is scarcely calculable in pipe under ground?

A. No, I don't know that.

Q. Well now, let me ask you this question. We can easily conceive of a line of railroad that has been laid in the open air for many years, 50 years say, and they have been subjected to all changes of temperature both diurnal and yearly, and they still are good as far as any stress that come from any fatigue on account of expansion or contraction due to their exposed condition; is that not correct?

—. No, sir.

Q. Is it not?

A. For the reason, Your Honor, that there is not a railroad track as long as you state that has been there for 50 years if it has had any traffic over it. The rails are replaced from time to time; they wear out comparatively rapidly; and the rail is not that old.

Q. Well, maybe I am mistaken on that.

A. Now, may I direct Your Honor's attention to this fact; that right here in Columbus on the street car track where it is not so convenient to replace one section of track, we have had failures of track, due to just that; sundering of the track.

Q. Could you tell that that fatigue of the rail of which you

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[fol. 1038] speak is due to atmospheric or climatic changes,

or was due to the frequent pounding of that rail by wheels going over it?

A. I think it is due to both.

Q. Both; but you could tell which was which; which accomplished the most of it?

A. No; I don't think anybody could.

Q. Well that is true; but isn't it a fact that the breaking of a rail for example with a train of cars running over it, that the stress and strain is produced by the load it transports rather than by the spreading and contraction due to atmospheric conditions?

A. I think in the case of a steam railroad track, uncovered, that is true.

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[fol. 1039] Mr. Huffman: We have already turned over the first part of it.

Commissioner Geiger: Have you any that you have not turned over that you are able to turn over today?

Mr. Huffman: Mr. Allensworth will have to answer that question.

By Mr. Huffman:

Q. Mr. Allensworth, when we adjourned last week you were discussing stray current electrolysis and fatigue of metals, I believe?

A. I think so, yes, sir.

Q. Do you wish to take up those matters where you left off and proceed?

A. Yes, sir.

Commissioner Geiger: Go ahead quickly, gentlemen.

The Witness: At the time that the hearing was adjourned I was discussing depreciation of mains. I had discussed the effect of what is generally known as galvanic electrolysis. Although stray current electrolysis may not occur in Columbus to such extent as to rapidly destroy pipe, it nevertheless is always present to some degree where electric power is distributed.

Stray electroylsis is ordinarily thought of as resulting from earth currents resulting from street car operation. However, stray current electrolysis can be and is produced by power distribution systems; so that stray current electrolysis is a force, no matter how small that force may be,

that deteriorates iron and steel pipe in the ground. Also fatigue of metals is a deteriorating force.

Commissioner Geiger: What is that?

The Witness: Fatigue of metals is a deteriorating force and is always present, however slight that presence may be.

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[fol. 1040] In that connection it might be well to direct attention to the fact that in considering these various forces that deteriorates iron pipe in the ground, the action, over a short space of time, may be slight, but we are dealing with comparatively long periods of time. Now in addition to a stray current electrolysis and the circumstance of the fatigue of metals, in my discussion of this subject, the depreciation of mains, I have explained I believe to the Commission the action of what is known as galvanic electrolysis, that is the rusting of iron in the ground. That deterioration results from the fact that pipe is laid in the ground comparatively close to the surface and is always exposed to the moisture in the ground.

I did not mention in my discussion that in addition to the alkalies and inorganic acids that were mentioned in my discussion, there is also present in the earth moisture organic acids of different kinds. The ground, of course, carries vegetation, the roots of trees, the roots of vegetable matter. The disintegration of plant growth in the ground is the result of the action of fungi on the wood or vegetable fiber and that action is of the order of a fermentation. The result of that action is organic acids in the disintegration of wood by what is known as rot. There is oftentimes generated acids on the order of acetic acid. There is also liberated tannic acids. The effect of all of this is that the ground moisture or ground water that comes in contact with these pipes is not a chemical compound. It is, as distinguished from a chemical compound, a chemical mixture and in that mixture can be found innumberable chemicals depending on the kind of test that may be made. So that

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[fol. 1041] it comes down to this, that pipe laid in the ground in Columbus obeys the inexorable law of nature to reclaim all for her own.

Man goes into the northern part of Minnesota and digs out of the ground iron in the form of oxide or iron rust. He puts that in a furnace and burns out the oxide and pro-

duces iron and steel and puts it back in the ground in the form of pipe. Some day that pipe is going back into the ground in the form of rust; that is inevitable. The process may be delayed but it cannot be stopped.

In determining the amount of depreciation accrued on the mains of the Columbus Gas & Fuel Company within the City of Columbus, I made a study as to the age of the different kinds of pipe comprised in those mains.

By Mr. Huffman:

Q. All right; now in considering the various elements which are of a deteriorating nature which you have previously referred to, have you recognized these as forces that are constantly present and at work in connection with the plant of the Columbus Gas & Fuel Company which is underground?

A. Yes, sir, I have.

Q. You say you have made an investigation in order to determine the age of the various classes of pipe according to the nature of material out of which they are manufactured in connection with your study of depreciation?

A. Yes, sir, I have.

Q. Will you please give the ages?

A. The cast iron pipe in this system in the City of Columbus has been in the ground for 36 years; that is the average age of all of the cast iron pipe in the ground is 36 and a fraction years.

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[fol. 1042] The wrought iron pipe has been in the ground between 26 and 27 years; if you want it exactly, the weighted average age is 26.25 years.

The weighted average age of the steel pipe in this system is 3.7 years.

The average age of all of the pipe, of all classes, is 20 years.

Q. Is this as of December 31st, 1929?

A. As of December 31st, 1929, Yes, sir.

Mr. Turner: I suppose you have an exhibit that we can look at, Mr. Huffman.

Mr. Huffman: As to these ages?

Mr. Turner: No; as to his so-called weighted average.

Mr. Huffman: We will prepare such an exhibit if that is desirable.

Mr. Turner: Well, we want it for cross-examination.
Mr. Huffman: Very well.
The Witness: I have stated the age——

By Mr. Huffman:

Q. What is the average age now of the whole system?
A. 20 years; that is the age of the mains.
Q. That is the mains of the Columbus Gas & Fuel Company?
A. Yes, sir. Now in my opinion cast iron pipe should have a useful life in this soil of 100 years.
Q. That is the life expectancy from the time it is put in the ground?
A. Yes, sir.
Q. Will you give the same for the other classes?
A. Wrought iron pipe should have a life of 50 years; steel pipe should have a life of 30 years and the remaining life expectancy on that basis——

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[fol. 1043] Q. That is the remaining life expectancy of these particular classes in this plant?
A. Yes, sir, would be as follows: The life expectancy of the cast iron pipe as of December 31st, 1929 would be 63.9 years or practically 64 years; wrought iron pipe would have an expectancy of life of 23⅓ years and steel pipe would have a life expectancy of 26 and a fraction years. Now assuming depreciation——

Commissioner Geiger: Wait a minute; all right, go ahead.
The Witness: Assuming depreciation to have a direct function of age, or in other words to accrue directly as age progresses, the depreciation on the cast iron pipe would be 36 per cent.

By Mr. Huffman:

That would be the total amount of accrued depreciation for the mains of this company as determined by age alone?
A. Yes, sir; if age alone were considered, the depreciation on cast iron pipe would be 36 per cent; the depreciation on the wrought iron pipe would be 53 per cent, and the depreciation on the steel pipe would be 12½ per cent, practically; or the depreciation on all of the pipe would be, that is the weighted average depreciation on all of the pipe,

38.64 per cent, which is equal to an average annual depreciation of 1.94 per cent, per year for these mains.

Commissioner Geiger: Now have you at the same place or some other place the amount of these different qualities of pipe; doesn't that have to come in there?

The Witness: Do you mean the lineal feet of the various kinds of pipe, Your Honor?

By Mr. Huffman:

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[fol. 1044] Q. Yes, the length of these various classes.

A. That appears in what has been marked City's exhibit No. 57.

Commissioner Geiger: Is that considered when you find your average for all pipe 38.64?

The Witness: Yes, sir, that is the weighted average.

By Mr. Huffman:

Q. Will you give us the lineal feet, please?

A. I haven't that before me.

Q. What exhibit did you say contains that?

A City's Exhibit 57 as I remember it—pardon me, it is in City's Exhibit No. 56—City's Exhibit No. 56 on pages 10, 11 and 12 of that exhibit.

Commissioner Geiger: What exhibit?

The Witness: City's Exhibit No. 56 is the lineal feet of the various kinds of pipe and the lineal feet on each particular size of the various kinds of pipe. There is also revealed the total lineal feet of pipe in the inventory.

Commissioner Geiger: Could you explain right at that spot, without going too much into detail, how you get the weighted average; what do you mean by that?

The Witness: By estimating the age against the number of feet of each particular kind of pipe and weighting into the lineal feet the particular size of the kinds of pipe. That is to say, Your Honor, if you please, one mile of two inch pipe would not be the equivalent of one mile of six inch pipe of the same kind, that is weighting.

Commissioner Geiger: Now in getting the weighted average do you get the element of the cost of different sizes of pipe?

The Witness: Yes, sir, that is one factor of weighting.

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[fol. 1045] Commissioner Geiger: And that is also in your weighted average?

The Witness: Yes, sir.

Commissioner Geiger: All right, I just wanted to understand that.

By Mr. Huffman:

Q. Proceed.

A. As I stated, the total weighted average depreciation on these mains, if age alone were considered, would equal a depreciation of 1.94 per cent per year. Now in what has been marked——

Commissioner Geiger: Wait a minute; you say "if age alone were considered"?

The Witness: Yes, sir.

Commissioner Geiger: Do you mean age without the consideration of stray electric currents of rust depreciation or anything else?

The Witness: Yes, sir.

Commissioner Geiger: Do you mean age without the consideration of stray electric currents or rust depreciation or anything else?

The Witness: No, I do not mean that, Your Honor; what I mean is——

Commissioner Geiger: Age under the conditions that you find the pipe laid in Columbus; is that correct?

The Witness: Yes, sir; under the conditions under which they exist in the streets and ways of this city.

Commissioner Geiger: All right,

The Witness: In other words, perhaps a better way to express it would be if the years term of service were used only to figure depreciation, the average depreciation on these pipes on the basis of age, would be 1.94 per cent per year.

Now in what has been marked Company's Seyffert Exhibit No. 10 and page 6 of that exhibit, at the bottom of that page there appears the following statement, "Depre-

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[fol. 1046] ciation expense represents an allowance equal to 4 per cent, of the depreciables contained in the rate base and is the minimum necessary to provide the amount required over and above the cost and expense of maintenance to keep the property of the public utility in a state of efficiency corresponding to the progress of the art or industry."

Commissioner Geiger: That is City's Exhibit what?

The Witness: No, sir, that is Company Seyffert's Exhibit No. 10.

Mr. Turner: In answer to the argument of the witness it should be called to the attention of the Commission that that factor for depreciation includes buildings, automobiles and everything else; it is a composite factor.

Commissioner Geiger: It is page 6 of Exhibit 10?

The Witness: Yes. The remark of counsel could be well taken, if necessary, but of course the statement itself should be self-explanatory, and that ratio of 4 per cent is the ratio claimed by the company to apply against all of the depreciable property in its inventory as of December 31st, 1929.

Mr. Turner: Is this argument or testimony? We object to the argument. Let him testify.

The Witness: However——

Mr. Turner: Is there no ruling?

Commissioner Geiger: I was just thinking; I think he has a right, as an expert, to analyze the argument of the other experts.

Mr. Turner: There is no argument of the other experts; they presented facts.

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[fol. 1047] Mr. Huffman: We don't think there is any doubt about it.

Commissioner Geiger: Objection overruled.

Mr. Turner: Note an exception.

Commissioner Geiger: Does Exhibit No. 10 show what he considers the annual depreciation of pipe under ground, or does he put it all in the lump sum of 4 per cent?

The Witness: It is all in the lump sum of 4 per cent.

Commissioner Geiger: He does not break it down into the different elements of depreciation?

The Witness: No, sir.

Commissioner Geiger: All right.

The Witness: I wanted to direct attention however, if I may, to the fact that the mains in the system is the larger part of the inventory and claimed reproduction cost and claimed value.

Mr. Turner: May I call the Commission's attention to the fact that the Seyffert exhibit, so far as it sets up depreciation, is a claim for depreciation in the rate base. It has nothing to do with the condition of the property; that is submitted in other exhibits.

Mr. Butler: General Turner, if our expert is making a very grave mistake, you can take care of that in due time.

Mr. Turner: No; there is a time right now to take care of it.

Mr. Butler: I think it is quite unfair to try to throw the witness off of his theme whenever he starts his discussion.

Mr. Turner: There has been no unfairness.

Commissioner Geiger: Go ahead with the witness subject to cross examination; you may cross examine fully.

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[fol. 1048] Mr. Turner: Am I thereby instructed not to butt in when I think he is arguing the case instead of giving testimony?

Commissioner Geiger: Well, I think you are perfectly entitled, when the argument comes, but to go into details as to what some witness testified to, that may be brought out better on cross examination.

Mr. Turner: Well, the only thing is I did want to call the Commission's attention to the fact that the witness was arguing about a Seyffert exhibit here on depreciation as a part of the expense and you may get that confused with the present condition.

Commissioner Geiger: I think we have it quite clear. Go ahead.

The Witness: The statement that I was just about to make when interrupted was that this proves one thing very conclusively and that is that if——

Mr. Turner: We are still objecting to the proof.

The Witness: That if——

Mr. Turner: No ruling?

The Witness: That if the depreciation is proceeding at no greater rate than 1.9 per cent a year, then a 4 per cent annual charage as the operating expenses for depreciation

for the property as an entirety, cannot be properly sustained.

Mr. Turner: Motion to strike out the argument.

Commissioner Geiger: Motion sustained.

Mr. Butler: Note an exception.

By Mr. Huffman:

Q. Mr. Allensworth, is not depreciation, in the last analysis, a matter of judgment?

A. It is.

Q. And from your knowledge concerning the surround- 3566
[fol. 1049] ing conditions of this plant and the average age, and from your experience as an engineer, have you formed a judgment as to the depreciation which should be allowed for mains of The Columbus Gas & Fuel Company as of December 31st, 1929?

A. I have.

Q. What is that per cent?

A. That amount of depreciation as applied to mains only, amounts to $680,746.00.

Q. What is that figure again please?

A. $680,746.00 that is 28 per cent of the reproduction cost new; in other words the remaining value of the mains, that is pipe in mains, is 72 per cent of the reproduction cost new.

Q. In other words, you figured them 72 per cent good?

A. I figured them 72 per cent good, yes, sir.

Commissioner Geiger: I understand you to say 48; you said 28?

The Witness: 28, and in that connection I wish to direct attention to the fact that having studied the age of this plant, having studied, and attached due consideration to all the circumstances surround- these mains as they exist in the City of Columbus, the depreciation that I deducted from reproduction cost new as distinguished from 38 per cent which would be the amount of depreciation if years in the ground alone were to be considered. The depreciation that I find on these mains is equivalent to 1½ per cent per year.

Commissioner Geiger: Well, now, can you explain very briefly why you make a distinction between your estimate-

depreciation due to years and your actual existing depreciation?

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[fol. 1050] The Witness: Yes, sir.

Commissioner Geiger: Of about 10 per cent?

The Witness: Yes, sir.

Commissioner Geiger: All right; don't make it too long.

The Witness: For the reason that during the life of these mains that have been maintained, they have been repaired there have been pieces of pipe added which has been in the ground less than the mains to which it was added. In other words the age, as I revealed it, is the age from the original installation of the pipe, and from time to time there are repairs and replacements of this pipe which would tend to extend the estimated age so to speak.

Commissioner Geiger: Now may I ask you there, Mr. Allensworth, would there be any relation between the money that the Company expended in replacing pipe that was worn out and the actual depreciation; could you tell how fast depreciation was occurring in the ground by a consideration of the amount of money that was necessary to spend in order to replace pipe; is there any relation?

The Witness: No, sir, because this property has not been in the ground long enough, but I believe—in fact it is my conviction—that due cognizance should be attached to the fact that the factors in my consideration in the determination of the accrued depreciation on these mains.

Commissioner Geiger: In other words, you give it the credit in value of 10 per cent over your estimated depreciation due to the fact that the Company has maintained the condition of the pipe by replacing worn-out pipe?

The Witness: That would be one way of stating it, yes,

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[fol. 1051] sir.

Commissioner Geiger: All right.

By Mr. Huffman:

Q. Mr. Allensworth, I would like to digress there for a minute and ask you if you considered what is commonly known as crystallization of metals in connection with your depreciation?

A. Yes, sir.

Q. Will you explain what is meant by that term and how it may be considered as having an effect upon the plant under consideration?

A. I recognize that crystallization in iron and steel may be and usually is present in pipe to some degree, and the action of fatigue over years of time would result in the point at which crystallization is present in failing first——

Commissioner Geiger: Mr. Allensworth, you have testified as to fatigue of pipe some time ago.

The Witness: Yes, sir.

Commissioner Geiger: Is there any difference between fatigue and crystallization? Does crystallization result from fatigue or is it the same thing? We do not want two elements given if they are the same thing.

The Witness: Crystallization, Your Honor, may be produced by fatigue. In other words, if you——

Commissioner Geiger: Well, don't explain it; we understand it; go ahead; we understand that crystallization may be produced by fatigue. Now, go ahead.

The Witness: Now my recent answer was directed to the question asked by counsel as to what might be the effect of crystallization in the pipe that may not have been caused by fatigue; it may have been the result of manufacture

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[fol. 1052] and it may have been in the pipe when the pipe was delivered at the side of the trench.

By Mr. Huffman:

Q. Is that what was referred to by a previous witness perhaps as deformity?

A. It might be classed as deformity; I do not know that they do it in pipe, but it is quite common in present day practice to subject steel railroad rails to X-Ray investigation to determine whether or not there are any such flaws in the molecular structure of the metal.

Commissioner Bricker: Didn't Professor Demorest testify that there is no such thing as crystallization of metals?

Mr. Turner: Yes, from fatigue, and he also testified there is no such thing as fatigue.

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[fol. 1053] By Mr. Huffman:

Q. Well, isn't it true, Mr. Allensworth, that if there exists this condition to which some metallurgists refer to as deformity, that under fatigue or strain, that the condition becomes accentuated?

A. Yes, that would be the point of fracture or failure as the result of strain.

Q. And this was one of the elements which you have taken into consideration in forming your judgment, which you have just explained?

A. I recognize that that is a force that works towards the ultimate deterioration of iron pipe.

Commissioner Geiger: You testified that you were accustomed to watch and gain such knowledgee as you could from excavations made and repairs made in the Columbus gas system; now, did you ever see a fracture which you said you could determine as being the result of fatigue?

The Witness: Yes, sir.

Commissioner Geiger: To what extent were those observations made?

The Witness: I remember of only one instance of that kind; it was a piece of cast iron pipe, and if I remember rightly, it was on Long Street, between 4th and 5th; I am not sure of the location. In uncovering that pipe it was split lengthwise—fracture.

Commissioner Geiger: Well, would you say it was the result of fatigue or defect in the manufacture of the pipe?

The Witness: Both. The fatigue resulted from contraction and expansion due to change in temperature, finally manifesting itself in a fracture at some weak point which resulted in the process of manufacture.

Commissioner Geiger: In that particular instance was 3571

[fol. 1054] there simply one length of pipe or did it continue for a number of lengths?

The Witness: There was only one length of pipe in that instance.

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[fol. 1055] By Mr. Huffman:

Q. The next item on page 11 of Exhibit No. 59 and under account No. 234 you have placed a depreciation figure for paving over mains in the amount, $22,750.00; will you please explain that figure of depreciation?

Commissioner Geiger: I didn't get that account number.

Mr. Huffman: Account No. 234, "Paving of Mains, Depreciated".

The Witness: The depreciation that I deduct from the reproduction cost of paving over mains is the same in proportion as the depreciation of mains; that is to say, that the Company's investment in paving over mains goes with the mains, and for that reason it is taken in the same proportionate amount as depreciation of the mains proper.

By Mr. Huffman:

Q. Now, what per cent depreciation is that?

A. 28 per cent depreciation.

Q. Do you figure that with the life of the mains the life of the pavement will also have taken the same course?

A. No, sir, I have not. The Company's investment in the pavement will ex-ire with the expiration of the mains.

Q. And the one naturally follows the other?

A. Yes, sir.

Q. What total have you found for depreciation of distribution line equipment?

A. $703,496.00.

Commissioner Geiger: Does that include the other item you have given of $680,000.00?

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[fol. 1056] The Witness: Yes, sir, it does; that is the sum of the depreciation of mains proper and paving over mains, the amount of depreciation of the paving being $22,750.00.

By Mr. Huffman:

Q. Then what total of reproduction cost new less depreciation have you found for distribution line equipment?

A. $1,808,989.00.

Q. Under Account No. 235 on Page 1 you have found a depreciation figure of $176,925.00, for services; will you explain how you arrived at that depreciation figure?

A. Yes, sir; the depreciation of services proceeds from the study of the depreciation of mains. The age of services is a little bit less than the age of mains, naturally so, because the installation of services follows the installation of mains. However, as against that, services are small branches from the main pipe to a curb box inside of the

curb line in the city streets or from the main proper to the property line where mains are laid in alleys with no sidewalk; the services are very much smaller pipe than are the mains. The services are more subject to these deteriorating influences than are the mains themselves; so that the depreciation that I find on services is a little bit higher than the depreciation that I find on mains, that is comparatively higher. The amount of depreciation that I determine as being the depreciation of services as of December 31, 1929, is $176,925.00. That is 35 per cent of the reproduction cost new of the services. The remaining value in services, $328,575.00 is 65 per cent of the reproduction cost new.

Q. The services you have found then to be 65 per cent good?

A. Yes, sir.

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[fol. 1057] Commissioner Geiger: Does your service include your curb box?

The Witness: Yes, sir.

Commissioner Geiger: Does that depreciate more rapidly than the pipe underground?

The Witness: No, sir, it does not.

Commissioner Geiger: The old method used to be to make lead connections there; do they do that now?

The Witness: Not in gas pipe, Your Honor.

Commissioner Geiger: No lead connections?

The Witness: The service lines of the water works in Columbus are lead pipe; I do not know of any lead pipe—in fact there is no lead pipe in the services of The Columbus Gas and Fuel Company.

By Mr. Huffman:

Q. Of what material do they consist?

A. The Company claims that all of the services are either wrought iron or galvanized steel pipe. I have used the wrought iron price in determining the reproduction cost of these services; however, I do not believe that they are all wrought iron. The use of galvanized steel for service lines has been followed only through comparatively recent years by this Company.

Commissioner Geiger: Isn't there what is known as galvanized iron?

The Witness: Yes, sir.

Commissioner Geiger: Well, wasn't that the ordinary service pipe for many years?

The Witness: It was a good many years ago but not recently. It is galvanized steel. And may I suggest to Your

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[fol. 1058] Honor if you go into a pipe store today and ask for a piece of galvanized iron pipe they will get you a piece of galvanized steel pipe. Galvanized iron pipe would only be delivered on special order, as far as I know.

By Mr. Huffman:

Q. In speaking of the depreciation of services, Mr. Allensworth, you have said that there are certain factors which go to make for more rapid depreciation in connection with services than with the distribution mains; will you explain that a little more fully, please?

A. The services do deteriorate more rapidly than do mains. I believe I mentioned that connection that services are exposed more or are exposed to deteriorating influences. They are smaller pipe. The services leave the mains at a convenient point and proceed to a point inside the curb line in a grass plot along the sidewalk. The moisture that gets to the mains in a paved street has got to go through the part of the street occupied by the services before it gets to the mains—that is speaking, of course, of paved streets with a type of pavement that acts as a watershed.

Q. Is it true that the watering of lawns and all of that will cause more moisture, perhaps, to reach these pipes and reach the mains also?

A. It does to some extent.

Q. And is organic matter perhaps more to be considered in connection with services than mains?

A. There undoubtedly would be more organic matter or products of organic matter come in contact with services than with mains, and I am speaking now of the average service, of course.

Q. For paving over services you have placed a depreciation figure of $5,741.00 under Account 235; will you explain

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[fol. 1059] how you arrived at that figure?

A. That is proportionately the same depreciation as is placed on services for the reason that investment in paving over services expires with the service.

Q. Paving over services, according to your position, then, will also follow services?

A. Yes, sir.

Q. What is your final reproduction cost figure, less depreciation, for paving over services?

A. $10,661.00.

Q. Making your total depreciation figure for service line equipment how much, Mr. Allensworth?

A. $182,666.00.

Q. And your reproduction cost less depreciation for service line equipment is how much?

A. Reproduction cost less depreciation for service line equipment including paving of services, $339,236.00.

Q. For the next item, Accounts 236 and 237, under "Meters and Meter Installation" you have placed a depreciation figure of $67,352.00; will you give us your reason for that?

A. Yes, sir; in connection therewith also depreciation on house regulators in the amount of $2,544.00.

Q. House regulators is Account No. 238, the next item?

A. Yes, sir, Account 238. Depreciation on meters and meter installations and house regulators is determined by attentive consideration of the kind and character of this investment with due recognition of the fact that the meter and meter installation and the house regulators are placed on the customers' premises; that they are subject only to occasional inspection. And basing depreciation of this class of equipment on my knowledge of similar kinds of property, I formed my conclusion as to the amount of depre-

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[fol. 1060] ciation accrued on the meters, which carries with it, of course, the meter installations, and the house regulators. My conclusion is that these classes of property have depreciated, as of December 31, 1929, to the amount of $67,352.00 for meters and meter installations and $2,544.00 for house regulators.

In so far as a determination of depreciation is concerned, a gas meter does not differ materially from an electric meter or a water meter or other such classes of property.

I believe the Company should be entitled to charge as operating expense a reasonable annual amount for depreciation for meters and house regulators. If such a charge is made, recognition must be extended to the fact that the investment in meters and house regulators is expiring. The expiration of this investment, in my opinion, cannot be determined by an examination of the mechanical parts of the meter.

Commissioner Bricker: You say "Cannot"?

The Witness: It cannot. The meters of this Company, and there are a very large number of them, are rectangular tin cases. Inside of the tin case there is a diaphragm connected with a bellows. In the older meters the bellows was leather and in the newer ones it is a composition.

The moving parts of the meter are very small parts; those parts are comparatively inexpensive. But to say that a meter that, upon inspection, shows no deterioration whatever, even though it has been in service for a great many years, would deprive the Company of what I believe to be a reasonable annual charge to cover depreciation of the meters. The annual charge for depreciation can only be determined on a full consideration of all the facts surround-

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[fol. 1061] ing this kind of property. If such annual charge is determined, the then remaining value that I have assigned to these meters, namely, 85 per cent or a depreciation of 15 per cent will be proved as a conservative result and consideration of all the facts.

Q. You have placed the meters as a whole, then, to be 85 per cent good?

A. Yes, sir.

Q. What particular parts of the meter do deteriorate more rapidly than the other parts?

A. If you are referring to the wearing and the mechanical parts——

Q. Yes.

A. It would be the small parts connecting the lateral movement of the diaphragm actuated in the action of the meter to the rotating parts of the meter registering device. However, it should not be lost sight of that the repair of that meter is not a matter of supplying some small parts that might be worn. It is not practical to repair a meter on the customer's premises. The expense of that repair is

more than the cost of the individual parts. A repair man must go to the customer's premises; he must remove the meter; he must take the meter to the meter shop and the repair is made, and if that particular meter is restored to the particular location from whence it came, it would have to be delivered. That would all be depreciation expense and a maintenance charge absorbed directly as operating expense, as distinguishd from a depreciation charge or annual charge for depreciation to return to the Company its investment in meters.

Q. Now for house regulators what is the amount of depreciation?

A. $2,544.00.

Q. Is that 15 per cent?

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[fol. 1062] A. That is 15 per cent of the reproduction cost new.

Q. What is the fact as to the mechanical deterioration of house regulators?

A. Very comparable to meters.

Q. What parts deteriorate most rapidly?

A. The diaphragm; that controls the pressure of the gas entering the customer's meter. The diaphragm in the case of a regulator actuates the valve. It is a vertical motion; there is no rotating motion as there is in the registering device of a meter.

Q. You have treated these as being similar and have arrived at the same percentage of depreciation?

A. In so far as the determination of accrued depreciation is concerned, yes, sir.

Q. For other distribution equipment you have made a small allowance for depreciation; discuss that.

A. No, I did not; that is the depreciation on other distribution equipment in the amount of $503.00, the reproduction cost less depreciation being $18,487.00. That amount of depreciation is the amount of depreciation fixed on that class of property by the Company.

Q. That is, you have included the same depreciation as fixed by the Company?

A. Yes, sir; as I understood the statement made by counsel as to certain acceptances, that was one of the acceptances.

Q. What is the total amount of depreciation as shown on this page which you have allowed for distribution property?

A. $959,101.00.

Q. And your total figure, Mr. Allensworth, for reproduction cost new less depreciation of this property is what amount?

A. $2,645,332.00.

Q. That is the distribution system property all inclusive?

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[fol. 1063] A. That is the distribution property comprised in the account numbers appearing on this page.

Q. Those account numbers follow the prescribed account numbers of the Public Utilities Commission?

A. They do.

Q. You may turn to Page 2 of City's Exhibit No. 59?

A. On Page 2 of what has been marked City's Exhibit No. 59, the first item on that page and the amounts appearing opposite that item, namely, total distribution property in the amount reproduction cost new, property used and useful, $3,604,433.00; depreciation $959,101.00, and reproduction cost new less depreciation of property used and useful, $2,645,332.00 is carried forward from the preceding page of this Exhibit.

Q. The first item appearing there is No. 245, "Other General Land"?

A. "Other General Land" is revealed in reproduction cost, amount $52,380.00. There is no depreciation deducted from land, and the amount of the reproduction cost less depreciation, therefore, is the same amount, namely, $52,380.00.

Q. Now for other general structures which comes under item 248, you have placed a depreciation figure there of $317.00. That is included as the Company's depreciation figure, is it not?

A. That is the Company's depreciation figure, as I understood the statement of counsel, as one of the acceptances.

Mr. Turner: Do we understand when he makes that answer that that is not his judgment at all; that it is simply an acceptance?

Mr. Huffman: Yes, that we are accepting the Company's figure.

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[fol. 1064] By Mr. Huffman:

Q. Under "General Office Equipment" which is account No. 249, there is a depreciation figure of $5,085.00; will you explain why you have included that?

A. Yes, sir; general office equipment is shown in the amount, reproduction cost $33,902.00; the depreciation deducted in my appraisal is $5,085.00, the reproduction cost new less depreciation being $28,817.00.

The amount of depreciation that I have deducted from the reproduction cost new of general office equipment is 15 per cent. of the reproduction cost, the remaining value being therefore 85 per cent. of the reproduction cost.

This general office equipment comprises all of the miscellaneous general office equipment in the Company's inventory. There is included desks and chairs and filing cabinets and typewriters and adding machines and the miscellaneous equipment that goes to make up that kind of equipment, namely general office equipment.

From some considerable extended studies of like general office equipment I have learned that depreciation on office equipment is impossible of positive determination by a mere inspection of the equipment. That is to say I have examined through the years a lot of typewriters; I have examined a lot of adding machines, I have examined a lot of office desks, I have examined a lot of other kinds of office furniture. I have examined such furniture as filing equipment and that sort of thing, and a superficial examination of that kind of equipment does not reveal the amount of depreciation accrued. For example, a typewriter upon examination may be found from all appearances to be in very good shape

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[fol. 1065] but the next day after the typewriter is examined it may go bad to the extent that a very considerable portion of its original cost may have to be expended to repair it and restore it. That of course is depreciation. Under those circumstances the charge would be absorbed as an operating expense under the title "Maintenance."

If the typewriter is discarded for any reason whatever, the capital account would be credited with the amount of the typewriter and depreciation reserve should be charged with a like amount and a new typewriter substituted and the investment of the new typewriter being charged to fixed capital account.

We do know one thing for certain, that this class of property is depreciating beyond our ability to observe it from superficial examination of the articles comprised in this classification. There again we get into the inseparable connection between depreciation accrued and depreciation deductible from reproduction cost in the determination of sound value, and the annual charge which the company should be permitted to charge as operating expenses to reimburse to itself the investment in this kind of equipment. I believe that the Company should be entitled to make an annual charge of a reasonable amount that will, in the course of a reasonable term, reimburse to it the investment that it has in this kind of equipment. If attentive consideration is extended to all these circumstances it should become obvious that the accrued depreciation on such kinds of equipment as is ordinarily found in such offices as the Gas Company, would be not less than 15 per cent. of the reproduction cost of that equipment.

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[fol. 1066] Q. You have found the general office equipment, in other words, to be 85 per cent. good?

A. Yes, sir.

Q. Pass to the next account, 251-256 under General Shop Equipment and specifically under Tools and Implements; I notice you have placed a depreciation amount of $4,671.00; will you please explain that?

A. General shop equipment, tools and implements appears as reproduction cost in the amount of $18,684.00. From that amount I deducted $4671.00 as accrued depreciation on that equipment, the remaining or sound value being $14,013.00. The amount of depreciation deducted is 25 per cent. That is based upon the fact that a reasonable expectancy of life of the kind of tools and equipment comprised in this classification should have an average life in use of about four years. As against that such small items as small tools are being constantly replenished. The investment, in other words, is kept up. So that from attentive consideration of the kinds of equipment and the kind of investment represented in this classification I have deducted 25 per cent. for depreciation which leaves the remaining value at 75 per cent. of the reproduction cost.

I believe, as I have stated in connection with some of these other accounts, that the Company should be entitled

to charge annually a very generous amount to reimburse to itself the investment in this kind of equipment, and if that is done the depreciation or the amount of investment or value expired in this class of property as of December 31st, 1929, would be not less than the amount I have here shown, namely $4671.00.

And thereupon a recess was taken until 2 o'clock P. M. of said day, Tuesday, July 7th, 1931.

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[fol. 1067] Afternoon Session, July 7, 1931

And also—

HARRY R. ALLENSWORTH, resuming the stand, continued his testimony as follows:

Examined by Mr. Huffman:

Q. Mr. Allensworth, in fixing the depreciation on general office equipment and tools and implements, general shop equipment, have you taken into consideration the depreciation in sale value of those commodities?

A. No, I haven't. If I had the amount of depreciation would be very greatly more than the depreciation that I have deducted from the reproduction cost new. For example office equipment it is, I suppose, generally known that the sale value of used office equipment is a very small part of its cost new.

Q. And is that largely true also for general shop equipment?

A. Yes, it is true.

Q. Tools and implements?

A. Yes, sir.

Q. Do these tools and implements wear out rapidly?

A. Some of them do. Small tools do. The larger piece of equipment do not.

Q. Which do you refer to as the smaller tools?

A. The general shop equipment, tools and implements, would embrace, for example, picks and shovels to the ex-

tent that any may be carried in the inventory. Picks and shovels in use do not last very long.

Q. Mr. Allensworth, what is your final figure on general

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[fol. 1068] office equipment, tools and implements as reproduction cost new less depreciation at the date certain?

A. Reproduction cost new less depreciation of general office equipment is $28,817. Reproduction cost new less depreciation of general shop equipment, tools and implements, is $14,013.

Q. Now, directing your attention to account No. 253 general garage equipment, you have under appliances and equipment arrived at a depreciation of $1736. Will you tell us how you reached that conclusion?

A. Yes. That depreciation is the result of the same consideration as extended to the general shop equipment, tools and implements. Appliances and equipment under account No. 253 are garage tools and garage equipment. The amount of depreciation deducted from the reproduction cost new is 25 per cent. Of the reproduction cost new. The remaining value as here shown, namely $5,206 is in fact 75 per cent. of the reproduction cost new.

Mr. Turner: Mr. Huffman, have you an exhibit comparable to our exhibit 6 which gives the specification of the cost of those things?

Q. Have you prepared a detail of that sort, Mr. Allensworth?

A. No, I haven't. As I understood the statement made by yourself to the Commission that the reproduction cost of these items was one of the acceptances.

Q. That is cost new?

A. Yes, sir.

Q. For those particular items?

A. Yes, sir.

Mr. Turner: I am not speaking of that; I am speaking generally of all of these things, not only the ones you accept, but those that you didn't accept as well.

Mr. Huffman: Well, of course, as to those that are ac-

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[fol. 1069] cepted there would be no occasion for any such prepared details.

Mr. Turner: Oh, yes, we want his figures on that.

Mr. Butler: Well, we didn't make them.

Mr. Turner: Oh, you must have made them or you wouldn't have accepted them.

Commissioner Geiger: As I understand you took simply their figures and depreciated it 25 per cent?

The Witness: Yes, sir.

Commissioner Geiger: Well, that is plain enough, gentlemen. You don't have to have anything more than that.

Mr. Turner: Note an exception.

Commissioner Geiger: All right, go on with the next. We understand it, but you can cross examine at length about it.

Q. Mr. Allensworth, under the item designated as account 253 here for autos, truck; you have found a depreciation of $30,868. Will you please tell us how you arrived at that figure?

A. The reproduction cost new of autos, trucks and so forth is here shown as $44,255——

Commissioner Geiger: You don't have to repeat all those figures. It is taking a tremendous amount of time repeating figures that are set down. State that the total depreciation is so much and the balance is so much.

Q. That is the same as the company's figures?

A. That is. That is the statement I wanted to make in connection with that amount. The depreciation that I have deducted from reproduction cost new is $30,868, which leaves a remaining sound value for that class of equipment of $13,387. The amount of depreciation deducted is in fact

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[fol. 1070] 69.75 per cent of the reproduction cost new, the remaining value being 30.25 per cent. The depreciation of the automobiles and trucks was determined by a study, a determination of the age of this equipment, and depreciation is taken at the rate of 25 per cent per year; in other words it is estimated that the life of a truck or automobile in use in the service of this company should average not more than four years. That, of course, leads to the statement that I believe that in the operating expenses this company should be permitted to charge annually, 25 percent of the cost of automobiles and trucks as the annual charge for depreciation. In addition to that consideration, I made a study of the value of these automobiles and trucks as revealed in the Auto Trades Association Blue Book. That

is the published schedules of the value or price of used cars——

Commissioner Geiger: We know what the Blue Book is, Mr. Allensworth; anybody knows that. You don't have to tell us that.

The Witness: Applying the Automobile Trades Association Blue Book rating to these cars produces a depreciation greater than that which I have deducted. However, there was only 85 per cent of the reproduction cost of these cars for which prices were found in the Trades Association Blue Book; and applying the Trades Association Blue Book prices to the cars listed therein——

Mr. Turner: Objection.

The Witness: Produces a depreciation greater than that I have deducted.

Chairman Hopple: Wait a minute. The general makes an objection.

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[fol. 1071] Mr. Turner: Applying the prices found in the Blue Book.

Commissioner Geiger: We don't think that has anything to do with it. He is simply sustaining his price by saying the price in the Blue Book—the depreciation in the Blue Book is even greater than his.

Mr. Turner: Note an exception.

Commissioner Geiger: Objection sustained.

Mr. Turner: Pardon me; I thought you were telling me it had nothing to do with it.

By Commissioner Geiger:

Q. Let me ask you a question. Did you look at any of these machines and examine them physically?

A. No, I did not.

Q. You are doing all of this apprais-ment by the fact that the Blue Book may have established that or something like it, and you think that 25 per cent a year for depreciation is about right?

A. No. I believe, in fact I have the conviction, that the average life of such cars for purposes of establishing depreciation in a case like this, should not be more than four years.

Q. Well, I have run my car for six years and it is a pretty good car now.

A. Yes.

Q. All right; if that is what you have done, we are glad to know it.

A. And the company has in this list of cars cars that are now obsolete and no longer manufactured, and there is no price available on them as far as that goes but——

Q. Now, Mr. Allensworth, let me ask you a question or two there. You have testified as to furniture and office equipment that you have not fixed the value on sale price; you have given that no consideration?

A. I did not.

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[fol. 1072] Q. Because the sales price would be less than the actual value of the property because it is a well known fact that furniture and equipment has a very much depreciated price if you try to re-sell it. Now, haven't you applied the same thing to these automobiles?

A. I have not.

Q. Well, I don't quite follow you.

A. I was trying to be very careful to explain that that is what I did not do.

Q. As to automobiles?

A. As to automobiles.

Commissioner Geiger: All right.

By Mr. Huffman:

Q. You say that certain of these cars you found no listing for in the Blue Book?

A. Yes, sir.

Q. Do you know the age of those cars as revealed by the inventory of the company?

A. I don't remember offhand, but there was some of them, I think, six, eight, and I think there was one possibly ten years old; but I am not sure about those ages.

Q. At any rate many of these cars which are several years of age which you might be able to use in the business as far as reproduction cost new less depreciation is concerned, would require a very high depreciation, would they not?

A. Yes, sir.

Q. And have you considered those elements in arriving at a depreciation figure for those particular cars?

A. Yes; I made up a study of the age of all of the cars listed in the inventory, and that age applied against an estimated average life in use of four years produces the amount of depreciation that I show here.

By Commissioner Geiger:

Q. Well, what is your basis for your estimated life of four years; where do you get that?

A. That is my personal observation and experience, prin-

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[fol. 1073] cipally from corporations using such equipment with which I have been associated in the past; I made quite a study of that for the Ohio State Telephone Company when I was with them, and I made some studies along similar lines for the Tri-State Telephone & Telegraph Company of Minnesota.

Q. Well, what I understand then, Mr. Allensworth, your estimated four year life is the result of your personal knowledge of like equipment in use in like companies?

A. Yes, sir.

Q. It is not a standard, nor does it come from actual inspection of the machinery which you have appraised?

A. No, it does not. I haven't inspected this equipment.

By Mr. Huffman:

Q. What total deduction for depreciation under account No. 253, general garage equipment, have you allowed?

Mr. Turner: Objection, Your Honor, may we have a ruling?

(Question read.)

Mr. Turner: We object.

Commissioner Geiger: Your objection goes to the fact that he has not laid the foundation for giving an opinion?

Mr. Turner: Exactly so, Your Honor.

Commissioner Geiger: We are of the opinion that it goes to the weight of the testimony rather than to the competency. The objection is overruled and exceptions noted.

Q. You may answer.

A. The total amount of depreciation deducted from this account is $32,604, the remaining sound value being $18,593.

Q. Well, Mr. Allensworth, would it be possible for you to arrive at a more correct percentage of depreciation by observation of these trucks than that which you have ar-

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[fol. 1074] rived at by this method?

A. No, sir, it would not. Myself or nobody else can tell the amount of depreciation accrued on an automobile, truck, or a system of mechanism of that kind. A tire, for example, rubber tire, may have the appearance of being sound and it may blow out, apparently for no reason whatever. Again wheels; wheels are made of rims and spokes and hubs. It is impossible to detect any weakness in a spoke of a wheel or the rim of a wheel by merely looking at it. The springs upon which the body of the truck is carried, the same thing is true. It is a physical impossibility for me or any other engineer to look at a set of springs under a truck and say that that spring has depreciated 10 per cent or 90 per cent or 100 per cent, and any engineer who says he can do it, is going far afield. In the matter of the automotive propelling parts, the engine, is a matter that one might open the cylinders of the engine, he might detect the amount of wear that there is on the walls of the cylinder, and he might detect the amount of wear that there is on the piston rings. That, of itself, would not be a measure of depreciation. Depreciation might have accrued far beyond the mere evidence that might be present.

By Commissioner Geiger:

Q. Well, Mr. Allensworth, isn't it a fact that there are many men in the City of Columbus who can go out and look at a piece of equipment and tell you reasonably what it is worth?

A. Yes, sir.

Q. Well, would they be any more accurate than you or not?

A. They might or they might not be; but the result of that examination and the fixing of sound value would be less than the sound value that I here reveal.

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[fol. 1075] Q. Well, if you don't know and didn't know——

A. Yes, I do know.

Q. Well, did you ever appraise trucks by looking at them?

A. No, sir.

Q. You say that those who would appraise it for sale value would take into consideration the market conditions and would appraise it according to the market?

A. Yes, sir.

Q. Rather than according to the actual, physical condition of the equipment that they were appraising?

A. Yes, sir, exactly that.

By Mr. Huffman:

Q. Well, as a matter of fact, doesn't the market value for trucks and automobiles of this sort vary almost directly with age?

Mr. Turner: Objection.

The Witness: It does.

Mr. Turner: I don't want to be butting in, but that is clearly not competent.

Mr. Butler: I wonder what you would do if you wanted to butt in?

Mr. Turner: I just have to apologize for getting in.

Commissioner Geiger: All right, gentlemen, go ahead.

Mr. Turner: Note an exception. I assume it is overruled.

Commissioner Geiger: Do you object on the ground that he has not——

Mr. Turner: Oh, no; the market value of second-hand machines has nothing to do with the reproduction cost less depreciation.

Mr. Huffman: It has a great deal to do with depreciation.

Commissioner Geiger: Didn't Mr. Allensworth testify to

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[fol. 1076] that?

Mr. Turner: That was the question Mr. Huffman asked him, and to which I objected.

Commissioner Geiger: Objection sustained.

Mr. Huffman: Note an exception.

Mr. Turner: Motion to strike the answer out.

Mr. Butler: I wonder if Your Honors please, if we are not accommodating the gentlemen quite a little. If there are to be restrictions upon this testimony, very well, we will have to stand it. Now, it seems to me, Mr. Turner first was trying to rule him out because he didn't know

anything about it and hadn't qualified, and now as soon as he begins to tell about these various facts he objects to that.

Mr. Turner: I think the Commission knows——

Commissioner Geiger: Gentlemen, we have ruled. Let us go to the next question.

Mr. Turner: It is out, is it?

Mr. Butler: Well, we will stand on the record.

Commissioner Geiger: The motion to exclude has been sustained.

By Mr. Huffman:

Q. What total depreciation do you find for the general property, Mr. Allensworth?

Mr. Turner: Objection; and may we have an exception appearing on this question?

Commissioner Geiger: Let us hear the question.

Mr. Turner: It is the same ruling you made before.

Mr. Huffman: I am asking for the depreciation on general property.

(Question read.)

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[fol. 1077] Commissioner Geiger: Overruled.

Mr. Turner: Note an exception.

The Witness: $42,677.

Q. And what is your total reproduction cost new less depreciation for general property?

Mr. Turner: Same objection.

Commissioner Geiger: Overruled.

The Witness: $215,639.

Q. And you have set up here the total depreciation for the distribution and general property, have you not, which is the sum of the figure which you have just given and the totals which you have brought from page No. 1 of this exhibit?

A. Yes, sir.

Q. What is the total depreciation figure for distribution and general property?

Mr. Turner: We object.

Commissioner Geiger: Overruled.

Mr. Turner: Exception. And so I won't have to interrupt, may I have a general objection and exception?

Commissioner Geiger: Every question and every answer, you may have it noted.

Mr. Turner: I don't want it written out and encumber the record.

Commissioner Geiger: All right.

The Witness: $1,001,778.

Q. What is the total reproduction cost new less depreciation as of the date certain for distribution and general property?

A. $2,860,971.

Q. You have ascribed a depreciation under your undis-

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[fol. 1078] tributed construction expenditures, Mr. Allensworth, according to various sub-divisions here. Will you please explain the depreciation which you have allowed for engineering and supervision?

A. The amount of depreciation deducted from the undistributed construction expenditures, and under that subdivision engineering and supervision, is $48,663. That is, in fact, the weighted average of depreciation of all the accounts to which engineering and supervision is applied, or to all accounts in which engineering and supervision is included.

Q. What is the amount of reproduction cost new less depreciation then for engineering and supervision?

A. $145,563.

Q. Now, what per cent depreciation does that weighted average which produces $48,663 represent?

A. 26 per cent in round numbers; actually 25.93 per cent.

Q. You may explain your allowance for depreciation for general and legal expenses.

A. The amount of depreciation deducted for that item is $9,733, the remaining sound value being $27,112.

Q. That is your reproduction new cost less depreciation?

A. Yes, sir.

Q. Is your depreciation figure there a result of a weighted average also?

A. Yes, sir, weighted average of the accounts in which general and legal expense is included.

Q. And is the per cent arrived at the same as for engineering and supervision?

A. It is.

Q. For omissions and contingencies you have included a depreciation amount of $29,198. Will you discuss that, please?

A. That amount is determined in the same way, that is the weighted average of depreciation of accounts in which

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[fol. 1079] omissions and contingencies are included.

Q. What was the per cent of your weighted average there?

A. 25.93 per cent.

Q. And the total reproduction cost new less depreciation for omissions and contingencies amounts to how much?

A. $81,337.

Q. You have also depreciated the reproduction cost new of interest during construction. Will you please explain that figure?

A. The amount of depreciation deducted from the item interest during construction is $58,399, the remaining sound value being $167,506.

Q. That represents a percentage, according to the weighted average?

A. That is the weighted average percentage as heretofore defined and explained relative to the other accounts under the title undistributed construction expenditures.

Q. That is also 25.93 per cent?

A. Yes, sir.

Q. For taxes during construction you have allowed no depreciation?

A. No, sir.

Q. What is your total undistributed construction expenditures?

A. $560,532, reproduction cost new.

Q. And what depreciation total have you arrived at for undistributed construction expenditure?

A. $145,993.

Q. And deducting that from your reproduction cost new given you what amount for reproduction new less depreciation for the undistributed construction expenditures?

A. $414,539.

Q. Under your total reproduction cost new including undistributed construction expenditures, what is the total for reproduction cost new as of the date certain according to your valuation, Mr. Allensworth?

A. $4,423,281.

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[fol. 1080] Q. And what is your total for depreciation of this item?

A. $1,147,771, the remaining sound value being $3,275,510. The amount of depreciation here shown in total is in fact 25.95 per cent of the reproduction cost, the remaining sound value being 74.05 per cent of the reproduction cost.

Q. Your total percentage of depreciation for all the properties then, Mr. Allensworth, is 25.93 per cent?

A. Yes, sir.

Q. Now, working capital, of course, requires no amount for depreciation; and what is your final total figure for reproduction cost new, property used and useful for the Columbus Gas & Fuel Company as of December 31, 1929?

A. $4,503,281.

Q. And your depreciation final set forth here is the same as the depreciation final which you have just given?

A. Yes, sir.

Q. What then is your final figure for the reproduction cost new less depreciation of the Columbus Gas & Fuel Company's property used and useful within the City of Columbus as of December 31, 1929?

Mr. Turner: Objection on the additional ground that he has made no such valuation.

Commissioner Gieger: I would be more inclined to sustain the objection so far as I am personally concerned. It is just simply a repetition of what is set down here. But the objection is overruled and exceptions noted.

Q. You may answer.

A. Reproduction cost new less depreciation or sound value of property of the Columbus Gas & Fuel Company for service within the City of Columbus, Ohio, as of December 31, 1929 as a going concern, $3,655,510.

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[fol. 1081] Mr. Turner: Motion to strike.

Commissioner Geiger: The motion will be sustained on the ground that it is a uselss expenditure of words and

stenographic report to repeat all that—I will have to retract on that. Motion overruled.

Mr. Turner: Note an exception.

Mr. Butler: I may say this, Your Honor; if you observed the other day we were not warlike in our protest against the ruling, and we have been trying to conform. I think a witness can easily encumber the record, and I may say frankly that we do not object to the admonitions of the court, and we shall try to comply with them as far as we can.

Commissioner Geiger: All right, thank you very much.

Q. Mr. Allensworth, can you tell us the total amount of the accrued depreciation reserve of this company as of December 31, 1929?

A. The balance sheet of the company shows depreciation reserve in the amount $1,166,762.30, and that amount allocated to property for service within the city of Columbus on the basis of allocation of other property accounts, would be a depreciation reserve allotable to the city of Columbus of $981,943.65.

Q. What percentage is that of the total allocated to within the city?

Mr. Turner: Whose total, Mr. Huffman?

Q. Of the company's total; what proportion is allocated to the part of the plant within the city?

A. The amount that I have read.

Q. Yes, but what percentage is that?

A. Oh, that is 84.159 per cent.

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[fol. 1082] Q. Are you familiar with over what period of time this amount has been accrued?

A. Yes. The first entry or the first credit to the depreciation reserve on the books of the company was entered December 31, 1920.

Q. That is virtually over a 9 year period then, is it not?

A. Yes, sir; and in the nine year period December 31, 1920 to December 31, 1929, the company had accumulated a total of $1,166,762.30 in depreciation reserve.

Q. You have testified that your final figure on page 2 here for reproduction cost new less depreciation of these

properties as of the date certain includes your consideration of going concern value, did you not, Mr. Allensworth?

A. Yes, sir.

Q. Tell us what amount the company claims as a separate allowance for going concern value?

Mr. Turner: If that is not repetition I don't know what is. It is here in the exhibits.

The Witness: $537,340.

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[fol. 1083] Q. You have what has been marked for the purpose of identification as City's Exhibit No. 61, Mr. Allensworth. Will you tell us what that is?

A. This is an income statement that I have prepared of the natural gas operation of the Columbus Gas & Fuel Company within the City of Columbus for the calendar year 1929.

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[fol. 1084] Q. Do you have any further explanation in connection with distribution?

A. Yes, I think to be informative, that I should explain that the sum of these mentioned adjustments in the company-wide business of the Columbus Gas & Fuel Company amounts to $36,114.86. The distribution expenses as revealed by the company's books for the calendar year 1929 amounts to $168,615.27. Accounting for these adjustments as I have explained, my interpretation of the distribution expense of the entire company becomes $132,500.41, and allocating that account to the City of Columbus, the amount of distribution expense properly includable in this statement becomes $111,220.05.

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[fol. 1085] Q. The next item appearing here is "General Expense"; you may state your amount and the reasons therefor?

A. The amount appearing opposite the title "General Expense," namely $101,042.28, is my interpretation of the amount of general expense properly includable in a statement of expenses upon which the reasonableness of gas rates is to be tested. The Company's ledgers reveal charges in the amount of $25,242.20 as the amount expended during the year 1929 which is charged as rate case expense. This amount has been excluded in my interpretation for the

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[fol. 1086] reason that I do not believe that the fairness of rates can be tested by including in the test the cost of making the test.

Mr. Turner: Motion to strike the answer out.

Commissioner Geiger: Motion overruled.

Mr. Turner: Note an exception.

Commissioner Geiger: It is a double-barrelled answer, part of it good and part of it may not be good.

Mr. Turner: Well——

Commissioner Bricker: If the rate is justified—if an increase is justified and the Company's case has merit, then should not the rate case expense be allowed, possibly to be amortized over a number of years, but shouldn't it be allowed?

The Witness: It is questionable in my mind that it should. Oftentimes in Commission procedure it has been allowed by amortization over the period of the rate ordinance or the effectiveness of the rate in question. But on the other hand I believe that the protest or the appeal of this 48 cent rate here is not justifiable and——

Commissioner Bricker: Well, if you put it on that ground that is different.

Mr. Turner: That is the reason for my motion.

Commissioner Bricker: We have excluded rate case expense where the case did not have merit, but where there is merit in an appeal of the company or any other case, where they have had to incur the expense in other words to get a fair rate——

The Witness: There may be cases where it would be justifiable to amortize the charge.

Commissioner Bricker: That is all.

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[fol. 1087] By Mr. Huffman:

Q. You may proceed.

A. The title appearing on this page "General Expense"—that is the title "General Expense" appearing on this page embraces general administrative expense and other general expense. Public Service Commission expense is not included nor is gas used by the Company included, and I have already explained that I have excluded the rate case expense.

Further than that, depreciation expense or annual charge for depreciation is not included in the amount shown opposite this title.

During the year 1929 the Columbus Gas & Fuel Company paid as salaries to general officers $3,423.33, and in addition to that paid to the Columbia Engineering & Management Corporation a fee of $82,496.11, which fee covers the salaries of executive officers of the Columbus Gas & Fuel Company.

Commissioner Geiger: Is that item to which you are now testifying included in the sum of $101,042.00?

The Witness: It is not. I have excluded both the $82,496.11 fee paid to the Columbia Engineering & Management Corporation and also the amount appearing on the Company's ledgers as salaries paid to executive officers, namely $3,423.33, making the total exclusion for these amounts $85,919.44. I have substituted as the salaries of general officers an amount of $20,000.00.

Commissioner Bricker: Upon what basis did you arrive at that figure?

The Witness: During the year 1925, the last complete year of operation before the advent of the Columbia Engineering & Management Corporation, The Columbus Gas & Fuel Company paid as salaries of general officers the

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[fol. 1088] amount of $18,784.44. I have increased that amount to the round number $20,000.00, and that is the amount included in my interpretation of general expense for salaries of general officers.

I have made miscellaneous adjustments and corrections of other items affecting general expense.

There is charged to general expense during the year 1929 $5,688.72 as expense of the Home Service Department and the Columbus Food Show. That, in my opinion, is purely merchandising expense—that is appliance merchandising expense.

There also appears in the amount $292.48 cost of appraisal of the Franklin County Rural Distribution Plant. That should have been charged to rate case expense.

There appears an item 10,000 copies of "The Whys of the Gas Question", the amount thereof being $248.27 and in my opinion that should have been charged to rate case expense.